

## Revision of OIML R76: Table of comments and references to the Working Draft

*"Q§" in front of a number refers to the questionnaire of May 2002; digits alone refer to sections in R76*

Q-Item	State	Comment	Secretariat's response	Considered in the Working Draft
Q§1		General		
1.1	AT	NAWIs subject to EU legislation (holds for all EU member states)	Statement	
	AU	There are some minor variations [see attachment A]. Interpretations in some areas may also well differ to some extent. Our requirements are not in "legislation" (except some basic aspects such as mpe's).	Statement	
	CA	R76 has not been implemented in its complete form. However, it has been used as the basis for Canada's Specifications Relating to Non-Automatic Weighing Devices (1998).	Statement	
	CZ	Regarding non-automatic weighing instruments we use EN 45501 as a harmonized standard to our national legislation in the field of NAWIs. The Directive 90/384/EEC has been implemented by a Governmental Regulation for non-automatic weighing instruments.	Statement	
	DE	R76 is the basis for the essential requirements in EEC Directive 90/384; presumption of conformity to 90/384 is possible through EN 45501 which is almost identical to R76.	Statement	
	DK	EU directive 90/384/EEC	Statement	
	FI	R 76 must remain in line with the essential requirements of dir 90/384/EEC	Statement	
	FR	Basis for essential requirements in dir 90/384 + presumption of conformity through En 45501 which is almost identical to R76	Statement	
	IE	Irish legislation is in line with directive 90/384/EEC as amended, which confers presumption of conformity to instruments manufactured in accordance with EN45501. The text of the directive as regards legal requirements is mandatory, the use of EN45501 is voluntary.	Statement	
	KR	Type approval on NAWI conforms with the requirement of OIML R76 and verification criteria for NAWI is currently working in order to conform with the OIML R76.	Statement	

1.1 (contd.)	NL	EEC Directive 90/384/EEC (and EN 45501) have been implemented.	Statement	
	RO	In 1994 OIML R76 was transposed into the national regulation NML 3-02/1-94. The SR EN 45 501 is in force also.	Statement	
	SI	We will accept the changes if the changes of R76 result in changes of the EU directive 90/384/EEC.	Statement	
	UK	UK legislation implements the EU NAWI Directive 90/384/EEC. As in most other European countries, the European standard EN45501, which at present is almost identical to R76, is commonly used as a basis for judging conformity with this Directive.	Statement	
	US	<p>R 76 is not fully implemented in U.S. requirement for weighing instruments contained in NIST Handbook 44 "Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices (HB 44)." Changes made to the HB 44 Scale Code in 1986 were a reasonably successful first-step effort by the U.S. legal metrology community to meet the U.S.'s moral obligation under the OIML Treaty and harmonize our NAWI requirements with R 76. For example, HB 44 requirements were changed from a relative (% of applied load) to a step tolerance structure and requirements for influence most of the factor testing required under R 76 in type evaluation were added. For example, temperature tests are fully harmonized. In 1986, the full implementation of R 76 would not have met the needs of the U.S. marketplace. The scale code changes included an additional class (III L) for heavy capacity scales (e.g., highway vehicles) with an allow-able <math>N_{max}</math> of 10 000 d. Also, the requirements for humidity tests were adopted but later removed (again for practical and cost/benefit reasons) from HB 44. While OIML Class IIII requirements are included in HB 44 they are limited to instruments used in law enforcement. Another difference between HB 44 and R 76 is that the EMI/RFI requirements for type evaluation were not adopted but instead were relegated for evaluation only as part of in-situ field-testing (See response to 1.3).</p> <p>Today, nearly 16 years after HB 44 first began to reflect R 76, there is a concerted effort among instrument manufacturers and the National Conference on Weights and Measures Inc. (NCWM) and its National Type Evaluation Program to consider adoption of R 76 requirements (and other OIML Recommendations where appropriate) whenever revisions to HB 44 and associated type evaluation requirements and test procedures are contemplated. This is a positive trend and support for harmonization with R 76 in the U.S. continues to grow. We are pleased to report that to support this move towards greater harmonization of NAWI requirements a study has been initiated to identify and document the differences between the U.S. and OIML NAWI requirements. The study will facilitate harmonization efforts and will include a comprehensive intercom-parison of the requirements for NAWIs in HB 44 and NCWM Publication 14 to those in OIML R 76 and R 60. This study will be based on the 2003 edition of HB 44 and will be submitted to the Co-Secretariats to supplement our responses to this questionnaire when it is completed.</p> <p>It is important to remark that your initiation of this revision of R 76 is sure to generate more interest in harm-onization, as it is apparent that the Co-Secretariats are committed to listening to the users of this important Recommendation and to developing a new edition of R 76 that will achieve greater international adoption.</p>	<p>Statement</p> <p>This is compatible with R76</p> <p>This study will be very welcome</p>	
1.1 (concluded)	ZA	For the sake of international uniformity we would accept all changes to requirements for Self and Semi-Self Indicating NAWIs.	Statement	

1.2	AT	We could accept a revision of R76 if directive 90/384/EEC and/or standard EN 45501 is revised accordingly....see also 1.1...NAWIs subject to EU legislation (holds for all EU member states)	Statement	
	AU	Clearly if legislation was required (we doubt that it would be in Australia) it would take substantial time to achieve & acceptance would depend on the political process.	Statement	
	CA	This would depend on the input we receive from our stakeholders. Canada will be addressing this issue at our annual Canadian Forum on Trade Measurement in November 2002, after which we will be in a better position to provide recommendations representing Canadian views.	Statement	
	DE	It does not contradict the European Directive 90/384/EEC, ie. it remains compatible with its essential requirements.	Statement	
	DK	We are not in favour of changes in conflict with essential requirements in 90/384/EEC because it will be difficult/impossible to change the directive.	Statement	
	FR	It doesn't influence the essential requirements in Dir. 90/384/CEE and it remains compatible with these essential requirements	Statement	
	IE	i) If changes refer to parts of R76 that are not contained in the directive, EN45501 will need to be updated. (ii) If changes refer to parts of the directive, it would first need to be amended before we could change national legislation.	Statement	
	KR	3.3, 3.12, 3.13, 4.4	Statement	
	NL	European countries can not decide themselves because it is EU legislation. EN 45501 must be updated immediately after (or in parallel with) OIML R 76)	Statement	
	RO	(You could refer to 2.1ff, 3.1ff, 4.1ff): The revision of R76 will imply the subsequent revision of EN 45 501 and perhaps of the European Directive 90/384/EEC which will also imply the harmonization of the national legislation.	Statement	
	SE	We are not in favour of changes that are in conflict with 98/384/EEC.	Statement	
1.2 (contd.)	UK	As it is EN45501 rather than R76 that is used to judge conformity with the Directive 90/384/EEC, any significant difference between the two might cause problems. We therefore hope that EN45501 will also be revised to match R76.	Statement	

	<b>US</b>	<p>U.S. instrument manufacturers could accept a revision of R 76 if:</p> <p>Paragraph 3.9.1 is revised to have the unit tested with the limits indicated on the leveling device. Current requirements look at the leveling device and then test to the greater tilt of the leveling device or 2/1000.</p> <p>Paragraph 3.9.2.3 is revised as we propose in 2.3 below.</p> <p>Paragraph 4.14.1 is revised to remove tare and preset tare as a primary indication.</p> <p>Paragraph 4.14.6 is revised to remove or modify the minimum height requirement and eliminate the 0.5 mm tolerance on display heights.</p> <p>Type evaluation of indicators and weighing modules is implemented (see our comments in 4.5).</p>	<p>Tilting will be discussed, see Q§3.4</p> <p>Will be discussed, see Q§3.4 See Q§3.5</p> <p>See Q§3.5</p> <p>See Q§4.5</p>	<p>Considered in 3.9.1.1</p> <p>Considered, but add. vote required, see 3.9.2.3</p> <p>Not considered acc. to vote</p> <p>Considered, see new para 4.13.6</p> <p>Considered in Annexes C and D</p>
<b>1.3</b>	<b>US</b>	<p>The U.S. has adopted the approach that EMI/RFI factors are, for practical and cost/benefit reasons, more efficiently and effectively addressed in-situ field-testing and not as a type evaluation requirement.* There is little disagreement that equipment designed for the R76 EMI/RFI tests is more immune to those effects in the field. However, the R76 requirements do not guarantee that an instrument will be immune to the effects of EMI/RFI in all of the environments in which an instrument could be operated. The U.S. Federal Communications Commission shielding requirements have played a major role in reducing emissions and appear to have contributed to mitigating some harmful EMI/RFI effects.</p> <p>*Note that the U.S. can and will conduct the R76 EMI/RFI tests as a part of any OIML R 76 related type evaluations.</p>	<p>Statement</p> <p>R76 has to follow OIML D11, further discussion under Q§3.6 and Q§3.11</p>	<p>No change acc. to vote in Q§3.6</p> <p>Annex B is adapted to OIML D11</p>
<b>1.4</b>	<b>AT</b>	<p>(a) Amendment 1 1994 to be implemented in the Revision</p> <p>(b) Because of EU legislation revision of R 76 to be seen in context with 90/384/EEC and EN 45501</p>	<p>(a) Yes</p> <p>(b) Statement</p>	<p>Amendment 1 is included</p>
	<b>UK</b>	<p>WELMEC Working Group 2, which has responsibility within the European WELMEC organisation for NAWIs, has been suggesting modifications that could be made to EN45501. As EN45501 and R76 are at present almost identical, these suggestions have been included in the replies in this questionnaire.</p>	<p>Yes</p>	<p>The important WELMEC points are included</p>

Q-Item	State	Comment	Secretariat's response	Considered in the Working Draft
<b>Q§2</b>		<b>Basic Principles and Items</b>		
<b>2.1</b>	<b>AT</b>	Give a note stating the content of chapter 3.1.9 of Welmec guide 2 (common application)	Yes, will be considered	New definition in T.1.2
	<b>AU</b>	<p>We are unsure of the intention of distinguishing between an amendment and a revision. Both are a change (we have marked R for what we think may require major changes, A for what may be minor changes).</p> <p>The distinction between NAWI's and AWI's needs to be clarified, particularly in regard to NAWI's operating statically but which are integrated into automatic systems (or which themselves carry out automated sequences). The WELMEC interpretation could be a useful starting point however it still leaves some situations unclear.</p> <p>To eliminate the need for retesting under AWI recommendations, we think it may be desirable to allow NAWI's to be automated under certain criteria (e.g. a sufficiently long settling period). For example an R76 NAWI indicator and R60 load cells may be used to form a discontinuous totalising automatic weighing instrument – provided certain criteria are met it should be possible to use this arrangement (and R76 mpe's), without seeking pattern approval under the R*** requirements.</p> <p>The purpose of the note regarding "Terms such as indicate ..." in T.1.2 is not clear. If it applies to the document in general it should not be here (perhaps it should be at T.1.3).</p>	Yes, will be considered	<p>New definition in T.1.2</p> <p>New definition in T.1.2</p> <p>Considered in T.1.2 and T.1.3</p>
	<b>CECIP</b>	Differentiation between "static" and "dynamic" weighing instruments: R76 = static; R51 etc. = dynamic (weighing in motion)	New idea; to be discussed	No change, see new definition in T.1.2
	<b>CZ</b>	<p>We recommend to amend the definition of non-automatic weighing instrument because it does not have to be sufficient and it can cause doubts in some cases. Our proposal is to modify the definition, as also quoted in WELMEC 2, Common Application, in the following way:</p> <p>"Instrument that requires the intervention of an operator during the weighing process, for example to deposit on or remove from the receptor the load to be measured and also the operator is required to determine or verify the obtained weighing result.</p> <p>Note: Determining the weighing result includes any intelligent action of the operator that affects the result, such as deciding when an indication is stable or adjusting the weight of the weighed product.</p> <p>Note: Verifying the weighing result means making a decision regarding the acceptance of each weighing result on observing the indication. The weighing process allows the operator to take an action which influences the weighing result in the case where the weighing result is not acceptable."</p>	Yes, will be considered	New definition in T.1.2
<b>2.1 (contd.)</b>	<b>DE</b>	Consider the "WELMEC definition"	Yes, will be considered	New definition in T.1.2

	<b>IE</b>	A new definition should be considered as existing criteria used in the definition may not be the most significant distinguishing characteristics e.g. the intervention of an operator to place a product on the pan is used as a criterion whereas the weight determination is made by a totally automatic process unlike the case with mechanical scales where the operator had a much more interventionalist role in the weight determination.	New idea: will be considered, see Q\$2.1	New definition in T.1.2
	<b>SE</b>	There should be an allowed wording for instruments when a machine is placing the object on the load receptor and the result is automatically fed into a computer.	Yes	New definition in T.1.2
	<b>SI</b>	It is necessary to define requirements more in detail, as it is treated in documents of WELMEC group 2.	Query: please supply more details	Not considered
	<b>UK</b>	The WELMEC 2 guide (Issue 3) Section 3.1.9 contains the following additional thoughts which might be helpful if suitably modified: The following interpretation of the definition of a non-automatic weighing instrument (NAWI) or an automatic weighing instrument (AWI) is intended to be used only when doubt exists in applying the definitions contained in Directive 90/384/EEC and the OIML recommendations. An instrument capable of performing consecutive weighing cycles without any intervention of an operator is always regarded to be an AWI. If an instrument needs the intervention of an operator, it is regarded to be a NAWI only if the operator is required to determine or verify the weighing result. Determining the weighing result includes any intelligent action of the operator that affects the result, such as deciding when an indication is stable or adjusting the weight of the weighed product. Verifying the weighing result means making a decision regarding the acceptance of each weighing result on observing the indication. The weighing process allows the operator to take an action which influences the weighing result in the case where the weighing result is not acceptable. Note: the necessity to give an instruction to start the weighing process or to release a load is not relevant in deciding the category of instrument'.	Yes	New definition in T.1.2
	<b>US</b>	T.1.1 – The U.S. believes the second sentence should end with the wording"... related to the <u>determined</u> mass. This revision is more specific in identifying that the other quantities, magnitudes, parameters or characteristics are related to the determined mass.  T.1.2 – The U.S. believes the definition of a non-automatic weighing instrument should be focused on the fact that the item to be weighed is in a static condition as opposed to operator intervention. We think that an item could be moved onto and off of the instrument by some other means (e.g., conveyor belt) than an operator. Perhaps the examples of NAWI can be elaborated to provide the clarification we think is needed	Yes, will be considered	Considered in T.1.1  See new definition in T.1.2
<b>2.1</b> (concluded)	<b>ZA</b>	This is really a matter of Scope. We suggest the definition and therefore the document excludes „Graduated (Undenominated), Non-graduated and Non Self-indicating instruments“.	Query: The suggestion is not quite clear	Not considered

2.2	AT	Replace "0,001 g <= e" (which definitely makes no sense) by "0.001 g >= e" for class I. We do not agree to the reason given in the footnote. Standard weights can be calibrated and corrected for deviations. Consequently the last sentence of 3.4.2 to be deleted.	New idea: Do other members want this item to be discussed? (see Q§3.4)	No change, the smallest weight acc. 3.7.1 and R111 is 1 mg.
	AU	<p>Point 3.3.3 requires revision. We believe that the intent of the clause (the mpe at any load should not be less than at any lower load) can be satisfied in cases which do not meet Table 4. Therefore it would be better to state the principle.  <u>Proposal:</u> Change point 3.3.3 to say  3.3.3 Arrangement of partial weighing ranges  The arrangement of maximum capacities and scale intervals of partial weighing ranges shall be such that (with increasing load) at any load the maximum permissible error is never less than the maximum permissible error at a lower load.  [The existing Table 4 could be retained as an 'acceptable solution' if others felt this to be necessary].</p> <p>Point 3.3.4 requires revision. A major consequence of this point is that the partial weighing ranges of the instrument move upward (in a Gross load sense) as tare is increased. This requirement should be made clear and explicit to avoid possible misinterpretation.  <u>Proposal:</u> Add the following to point 3.3.4.  A consequence of this requirement is that the partial weighing ranges move upward (in a Gross load sense) as tare is increased. See attached diagram [Attachments B].</p>	<p>No, because we cannot see any practical relevance. Can you, please, supply us with some practical examples?</p> <p>No, we cannot see an improvement</p>	<p>Not considered</p> <p>Not considered</p>
	CA	At the request of Canadian industry, Measurement Canada created an additional accuracy class, III HD, which is similar to the USA's class IIIL. Industry expressed a need for high capacity devices with small graduation sizes, but did not feel class II tolerances were warranted since these devices are used in industrial applications for the weighing of medium priced commodities.	No, this seems to be a very special application	Not considered acc. to vote
2.2 (contd.)	CECI P	(a) Introduction of auxiliary indicating devices for all classes (except for retail scales), (b) Reduction of minimum number of verification scale intervals to 2000 in class II because of problems of classification. e.g. the market requires variants with reduced resolution to 5000e class II instruments with $e \neq d$ , typically 2000e and 4000e.	(a) New idea; do other members accept? (b) New idea: is this acceptable for other members?	<p>Not considered acc. to vote in Q§3.4</p> <p>No change, vote in Q§2.2</p>

	<b>UK</b>	Should the following sentence from Section 3.2 of EN45501 be included?: "The minimum capacity is reduced to 5e for instruments in classes II and III determining a transport tariff." Should garbage weighers be allowed to have a minimum capacity of 5e?  EN45501 Section 3.4.1 refers to a "decimal marker" whereas R76 Section 3.4.1 refers to a "decimal sign". Is there any reason for this difference? (See also Section 4.2.2.2)	Yes, this is recommended  We recommend "decimal sign" in accordance with VIM	Considered in 3.2  "decimal sign" will be used in R76
<b>2.3</b>	<b>AT</b>	Insert additional requirements for vehicle mounted instruments in chapter 3.9.	Yes, see Q§4.1	Considered in T.1.2.11, 3.9.1 and 4.18
	<b>AU</b>	Point 3.7.3 It has proven impractical to achieve 20% of standard masses for high capacity instruments (e.g. 250t hopper). Consequently NSC has relaxed the requirement to 15%. Our requirement for this is: When testing instruments with Max > 1t, instead of standard weights any other constant load may be used, provided that standard weights of approximately 15 to 20% of Max are available. This method is only suitable if the repeatability of the instrument is satisfactory. If the instrument is loaded three times to about 20% of Max (any constant load can be used), the repeatability error shall not be greater than 0.2e. Point 3.9.1 Tilting – some changes / clarifications are required. In particular the location of a level indicator must be in a place "clearly visible to the user" whereas there has been a tendency for level indicators to be 'hidden' below the instrument load receptor. We suggest that this be made acceptable, but only if: <ul style="list-style-type: none"> <li>the load receptor is easily removable by the user without tools,</li> <li>the load receptor weighs less than 10 kg, and</li> </ul> A notice stating "must be level when in use – level below platter" (or similar wording) is provided in letters at least 2 mm high, in a location which is clearly visible to the user in normal operation	Yes, but special item, see Q§3.4 and Q§3.9          Yes, but special item, see Q§3.4	Not considered, the error will be too high at 15 %, 50 t masses are available   Changes in 3.7.3   Considered in 3.9.1.1
	<b>CA</b>	With respect to tolerance structure, Canada has harmonized with the USA by applying an additional step tolerance (5e in-service) for class III and IIII devices, as many scale manufactures conduct business in both the USA and Canada. Canada has also adopted class IIIHD tolerances which fall between the class III and IIII tolerances.	Statement	
<b>2.3</b> (contd.)	<b>CECIP</b>	The error allowances should be reviewed, and consideration given to basing them on a percentage system. This would remove the major jumps in error values at consecutive indications	New idea: do other members wish to discuss the issue? (see Q§2.3)	Vote Q§2.3: No change of the error regime
	<b>IE</b>	Unless a new system can be developed which would allow for relative errors	New idea: see response to CECIP proposal above	Vote Q§2.3: No change of the error regime



PL	<p>In §3.5.4.2: delete first three sentences, not needed.</p> <p>Add repeatability, span stability and others into Table 7.</p> <p>In §3.7.3: delete two last sentences. When using 20% or 35% max of standard weights the testing time and uncertainty of measurements increase.</p> <p>In §3.9.1: take into account that the instruments with the tilting sensor (automatically) switch indications off if tilting is too high.</p>	<p>No, it's the manufacturers choice In principle yes, but we suggest the whole section 3.5.4 be completely revised under the new aspects of the modular concept and Table 7 be adapted to the special modules considered. (see Q§2.4) Yes, but special item, see Q§3.4 and Q§3.9 Yes, see Q§3.4</p>	<p>No change, see new paragraph 3.10.2</p> <p>Changes in table 7 in 3.10.2.1</p> <p>No deletion, but changes in 3.7.3</p> <p>Considered in T.1.2.11, 3.9.1 and 4.18</p>
UK	<p>EN45501 Section 3.5.4 refers to "type examination" whereas R76 Section 3.5.4 refers to "pattern approval". Is there any reason for this difference? We suspect that "type", as in the OIML terminology document, should now be used.</p> <p>In R76 Section 3.5.4.2, "contribute" should be "contributes". It is correct in EN45501.</p> <p>R76 Section 3.5.4.2 refers to "2<sup>nd</sup> paragraph of clause 4, page 40", but what is that? (This reference is not in EN45501.). Also, this line does not look like the subheading it actually is.</p> <p>EN45501 Section 3.5.4.2 says "...fractions <math>p_i</math> have the values..." whereas R76 Section 3.5.4.2 says "...fractions <math>p_i</math> may have the values...". Is there any reason for this difference?</p> <p>For Sections 3.5.4.2 (and 4.12), WELMEC has accepted that an indicator used with a digital loadcell may have a <math>p_i</math> of zero, leaving the digital loadcell to have a <math>p_i</math> of one. Additional text on this will bring R76 in line with R60.</p> <p>In Section 3.6.2.2 (and Sections A.4.7.1, A.4.7.2), does "...load receptor having n points of support..." need to be better defined? For example, does a load receptor resting on the five points (four arms and one centre point) of a "cross" bolted to a single load cell have five or one "point of support"? Section 3.6.2.3 is also relevant.</p> <p>In Section 3.9.1.1, it would be helpful if the text of the "Note" at the end could be moved into the first paragraph. Section 3.9.1.1 demands that the level indicator be "in a place clearly visible to the user", unless certain conditions, including being "installed in a fixed position", apply. However, some NAWIs are designed either to be used flush-mounted into a checkout or resting on top of a checkout. On those instruments it is not possible to have a level indicator visible in normal use. Could the phrase "clearly visible to the user" be replaced by "clearly visible or readily</p>	<p>Minor point, will be clarified</p> <p>Minor point, ditto</p> <p>Minor point. The correct reading would be: "... (see 2<sup>nd</sup> paragraph of Introductory note to Chapter 4) " unless the paragraph is changed</p> <p>Will be clarified</p> <p>Yes, but anyway we suggest the entire section 3.5.4.2 be revised, see Q§2.4 Query: Could you be mixing up the pan with the load receptor?</p> <p>See Q§3.4</p>	<p>Is changed in "type examination" in the whole document</p> <p>New wording in 3.10.2.1</p> <p>Paragraph is changed (3.10.2.1)</p> <p>EN45501 to be adapted to R76</p> <p>See new wording in 3.10.2.1</p> <p>See examples in A.4.7.1 figure 8</p> <p>Not considered, but see new wording in 3.9.1.1</p> <p>Considered in 3.9.1.1</p>

		<p>accessible to the user", to allow the level indicator to be placed under an easily removable load receptor?</p> <p>In Section 3.9.3, there appears to be a requirement to test with mains frequency variation. Does anyone do this? Should it be removed?</p>	Yes, should be deleted	Considered in 3.9.3 (Vote to Q§3.4)
<p><b>2.3</b> (contd.)</p>	<b>US</b>	<p>With the possible acceptance of the type evaluation of modules §3.5.5 will need revisions. Also, error apportionment may need updating (consideration of digital load cells for example). Below is paragraph 3.9.2.3 from R 76. The U.S. recommends that 3.9.2.3 be revised to provide the advantages of a zero tracking device in a multiple range scale to reduce the relative error of weighing light loads. A suggested rewrite is:(added text is underlined, deleted is crossed out)</p> <p>3.9.2.3 Temperature effect on no-load indication The indication at zero or near zero shall not vary more than one verification scale interval for a difference in ambient temperature of 1 °C for instruments of class 1 and 5 °C for other classes. For multi-interval instruments and for multiple range instruments <u>without a zero tracking device</u>, this applies to the smallest verification scale interval of the instrument. <u>For multiple range instruments with a zero tracking device, this applies to the largest verification scale interval of the instrument.</u> Example: A multiple-range weighing instrument has two weight ranges; 0 - 6 kg by 2 g and 0 - 15 kg by 5 g. The previous wording required a zero drift with temperature to be less than 1 part in 7 500 for every 5 degrees C. (2 g divided by 15 kg). The new wording allows a zero drift with temperature to be 1 part in 3 000 for every 5 degrees C. (5 g divided by 15 kg). The relative error of weighing a 100 g load decreases from 5 percent to 2 percent. For a 30 g load (one slice of cheese) the relative error is reduced from 16.7 percent to 6.7 percent. Justification: As we attempt to implement an effective production-meets-type program, the probability of failure increases greatly as the tolerances becomes tighter with no known benefit to either the customer or legal metrology goal of equity in the marketplace. If the instrument is at the center-of- zero before a transaction occurs, it will accurately weigh, with or without a tight zero drift with temperature specification.</p>	<p>Yes, will be considered in connection with the revision of 3.5.4.2, see Q§2.4</p> <p>See Q§3.4</p>	<p>See new para 3.10.2</p> <p>see 3.9.2.3</p>
<p><b>2.3</b> (concluded)</p>	<b>ZA</b>	Clarify certain aspects , e.g. is 3.9 applicable to mechanical instruments?	To be considered under Q§3.4 (refer to R76, No 8.1 and 6.4 through 6.9)	Considered in 3.9
<b>2.4</b>	<b>AT</b>	See 3.4 below	Yes, see Q§3.4	

	<b>AU</b>	Point 3.5.4 Possibly some need for amendment / clarification of apportioning in various situations (e.g. the Table mentions 'load cell' however the situation may be different for 'digital load cells' which are increasingly common). Specific and detailed treatment of indicators (& perhaps other similar modules) is needed in this or a new document (or an Appendix).	Yes, an amendment will be considered; see also Q§3.4  Yes, will be considered	See new para 3.10.2  See new Annex C
	<b>CA</b>	The Canadian requirement for modules tested separately (weighing element or indicating element) is 0.7 times the acceptance limit of error.	Statement	
	<b>CECI P</b>	Recognition of modular approach of WELMEC (incl. e.g. indicator, software, data storage device, PCs, terminals and weighing modules) Certification of modules should be integrated in R76; general requirements may be handled in a separate document because these might be of interest for other recommendations as well. 3.5.4.1 error fractions between 0 and 1 OIML R76 paragraph 3.5.4.2. table 7.: There is now an "Acceptable solution" with a $p_i$ factor of 0.5 for mechanical and electrical connection elements, without any test. Along this solution there should be something created (requirements and tests) to "certify" e.g. junction boxes and so on, to gain a better $p_i$ factor for mechanical and electrical connection elements.	Yes, will be considered Yes  As R76 presents an acceptable solution it is already today possible for a manufacturer to choose a smaller $p_i$ factor if he is able to prove that.	See new Annexes C to F  See new 3.10.2  No change
	<b>CZ</b>	Just a note: There is an editorial mistake on page 24 in clause 3.5.4.1. There should be "page 30" instead of "page 40" in the brackets.	Minor point: will be considered	See new 3.10
	<b>DE</b>	In principal the modular concept is confirmed. However, details on testing of indicators, weighing modules and terminals should be given in R76-1 itself. Adapt $p_i$ factors to recent developments in technology (eg. $p_i = 0$ for purely digital devices/modules, $p_i = 0,3...0,8$ for load cells and $p_i = 1$ for weighing modules).	Yes, will be considered	See new Annexes C to F
	<b>FR</b>	Our proposal & rationale is: to adapt it to recent developments in technology	Yes, will be considered	See new Annexes C to F
<b>2.4</b> (contd.)	<b>NL</b>	Our proposal & rationale is: to extend the description of modules with the experiences as described in the respective WELMEC guides.	Yes, will be considered	See new Annexes C to F
	<b>SE</b>	Clarify the modular concept to include clearly e.g. software	Yes, see Summary Q§2.4 and Q§4.3	See new Annex F
	<b>UK</b>	WELMEC fully supports modular approval, including loadcells, indicators, point-of-sale hardware and point-of-sale software. This approach has proved very successful and very popular in Europe.	Yes, the WELMEC modular approach will be considered	See new Annexes C to E

	<b>US</b>	The U.S. experience with type evaluation of modules* is well-established (i.e., almost 30 years of experience with digital indicator modules) and an accepted concept in the U.S. legal metrology system. For high capacity instruments, it is the only practical means of having any degree of assurance that the scale is capable of meeting temperature/pressure/power interruption requirements. This concept has been accepted in Europe for load cells and in WELMEC for indicators and should be incorporated into R 76 and the OIML Certificate System. *module means "separate elements" such as indicators or load receiving modules.	Yes, confirmed	See new Annexes C to F
	<b>ZA</b>	Modular concept only for Pattern Approval.  Remove 1 <sup>st</sup> Paragraph of Par 3.5.5: Where a load measuring device is tested ..... The last Paragraph in Par 3.5.5 prevent modular testing for verification anyhow	Will be considered in connection with the revision of 3.5.4.2 and moved to the Chapter for verification	3.5.5 is deleted completely
<b>2.5</b>	<b>AT</b>	a) Delete 8.4.1 "subsequent verification". In principle there should be no differences between verifications, the legal implications of a verification being always the same.  b) Insert a requirement to provide means to secure an instrument against changes of relevant measurement characteristics incl. adjustment. Unauthorised changes must be evident ("footprint"). Consequently change the wording of 8.2.1.2, last sentence, of amendment 1, because a password is not sufficient	(a) No, not in line with OIML D9  (b) New idea "software sealing": see Q§3.9	Not considered  Considered in 4.1.2.4 and 8.2.1.2
<b>2.5 (contd.)</b>	<b>AU (contd.)</b>	Aspects regarding sealing / security need more detailed treatment. What to seal etc, ease of seeing alteration, display of codes, flat area for application of seal/verification mark. We quite frequently see instruments where the provisions are barely adequate. For example, some instruments have provision for sealing calibration (span adjustment), but allow alteration of zero/tare operation parameters (e.g. range of zero operation or maximum tare capacity) without security. Trade measurement inspectors need to be able to see easily whether an instrument has been sealed, and whether it has been tampered with. The following are some examples. (i) A switch (selecting Secured mode/Unsecured mode) accessible through a hole over which a security label could be applied. Problem: Once the label has been applied it is not evident whether the switch has been correctly set in the secured mode, or has been left in the unsecured mode. Possible Solution: Have the instrument display 'Locked' during its power-up sequence if the secured mode has been selected. (ii) As in 1, but the switch is located within the instrument casing (with the intention of applying a seal to that switch. Problem: It will not be evident to the trade measurement inspector whether the switch has been sealed without opening the instrument casing. This is not acceptable due to safety considerations (and other considerations). Possible Solution: It should be possible to determine the status of sealing/security without dismantling the instrument in any way. (iii) An instrument has a facility for a PIN code to be set to provide some security (e.g. to make it difficult for an un-knowledgeable person to alter calibration). Problem: It could involve a complicated sequence of commands for a trade measurement inspector to determine whether a PIN has been set (otherwise the instrument may be unsecured).	Yes, the definition of "essential requirements" sealing/securing is necessary plus possibly acceptable solutions. The terms "sealing" and "securing" should be defined and the definitions put into the "Terminology"  These examples could be taken as acceptable solutions; however, we can think of other acceptable solutions having the same level of security	Considered in 4.1.2.4

		<p>Possible Solution: Have the instrument display 'Locked' during its power-up sequence if a PIN has been set and the instrument is in the secured mode has been selected.</p> <p><u>Proposal:</u></p> <p>The requirement in the first paragraph of 4.1.2.4 "Means shall be provided for securing components and pre-set controls to which access or adjustment is prohibited" is not sufficiently well defined. We suggest "Means shall be provided for securing components and pre-set controls to which access or adjustment is prohibited – this shall include any controls (including parameter settings) alteration or adjustment of which may result in the instrument not complying with a requirement of this recommendation."</p> <p>The last paragraph of Point 4.1.2.4 needs more specific requirements regarding means of sealing, including perhaps examples such as above as 'acceptable solutions'. We suggest "Security/sealing of components and pre-set controls (see paragraph 1 of 4.1.2.4) shall be provided. It shall be possible to determine that security is in place by simple means and without dismantling the instrument. Security may be provided by passwords or similar software means provided that any access to the secured controls or functions becomes evident, e.g. by automatically updating a code number the value of which at the time of the last verified set-up had been durably marked on the data plate (or marked with the verification mark). It shall be possible to view the code number in a simple manner – for example as part of the instrument power-on or display check sequence. A number of acceptable solutions are provided below:</p>	See above	
2.5 (contd.)	CA	<p>Canada has no requirement to mark Min and no size requirements. Canada does however have a requirement for marking the type approval number and a requirement for having a place on the device to accommodate the initial verification marks.</p> <p>Canada has no legislated requirements for subsequent verifications, however device owners are responsible for ensuring that devices are accurate at all times</p>	Statement  Statement	
	CECIP	<p>Updating of 7.2. and 8.4</p> <p>Alternatives to self-destructing labels must be provided e.g. using possibilities of indicating in digital displays</p> <p>7.2.1 should be amended to clarify the intention and meaning of the third indent, should the verification mark be visible and if so to whom, or should it be easily accessible for enforcement officials</p> <p>7.2.2 should be amended such that the space and location requirements for verification stickers should be a matter for national legislation subject to the requirements of 7.2.1. Harmonise markings, language independent</p>	<p>Yes, will be considered when revising the chapter on verification</p> <p>See Q§3.8 and Q§3.9</p> <p>Yes, as far as possible with regard to national legislation</p>	<p>Considered in 7.1.4</p> <p>Change in 7.2.1</p> <p>Change in 7.2.1</p>
	CZ	<p>We recommend to amend 8<sup>th</sup> paragraph of clause 8.3.3 as follows: "To perform the tests the approving authority should preferably use their own equipment. It may, in special cases, require from the applicant to provide span adjustment procedure for the instrument to be verified, to supply test loads, equipment and personnel to perform the test. Therefore this paragraph is valid for clause 8.4.1 simultaneously. See also 3.9 of this questionnaire.</p> <p>Rationale: The span adjustment should be in our opinion a part of the test performance during verification. In a majority of cases, the instrument under verification can be brought to within the tolerance limits by a span adjustment only and the verifying authority should have a possibility to arrange for by the adjustment. (the adjustment procedure can be sometimes complicated requiring a described procedure specified by the manufacturer or a repairing company</p>	<p>No; the ownership of test equipment is no item for R76</p> <p>No, see above.</p> <p>Statement</p>	<p>Not considered</p> <p>Not considered</p>

	<b>IE</b>	As the recommendation is not mandatory this section can be seen only as an advice and maybe of importance to countries developing their legal metrology systems.	Statement	
<b>2.5</b> (concluded)	<b>UK</b>	<p>EN45501 Section 7.2.1 refers to "...as required by national rules of the country where the instrument is intended to be placed on the market or taken into service." R76 Section 7.2.1 does not. Is there any reason for this difference?</p> <p>In Section 7.2.1, on flush-mounted NAWIs (eg POS checkouts) it is not possible to put the verification marks where they are "visible without the instrument having to be moved when it is in service". It is then common practice to put them so that they can be seen if the load receptor is removed.</p> <p>Self-adhesive verification marks deteriorate or eventually fall off if the instrument is regularly cleaned (eg for food sales). R76 could say that these marks should either be suitably durable for the use of the instrument or should be protected.</p>	<p>Not relevant for revision of R76, because the difference is due to European Directive 90/384/EEC Yes, to be discussed under Q§3.8</p> <p>To be considered under Q§3.8</p>	<p>Not considered change in 7.2.1</p> <p>Considered in 7.2.1</p> <p>Considered in 7.2.1</p>
	<b>US</b>	We recommend that Chapter 7 be revised to include a statement regarding language. We believe paragraph 8.3.4 Stamping and section 8.4 Subsequent Metrological Control (e.g., also includes language on initial verification) should be deleted. R 76 should be limited to product specifications, test procedures and tolerances. Compliance with R 76 requirements is determined at two different levels (e.g., type evaluation and field levels) and this revision process provides an opportunity to separate and clarify the Recommendation so that the requirements and test procedures for type evaluation and field inspection are separate. Field level tests such as initial and subsequent verification tests and user and installation requirements must be based on R 76 but should be left to the discretion of national regulations which must also have requirements which are appropriate and applicable to "legacy" instruments currently in the marketplace which will not meet R76. Perhaps it is time to have a separate OIML Document based on R 76 that could be adopted into national regulations for field level application.	Query: Please explain, see also Q§3.8 No, but we suggest all relevant information concerning verification and stamping be collated into one dedicated Chapter of R76-1.	Not considered acc. to vote
<b>2.6</b>	<b>NL</b>	The descriptions about preset tare, and tare and how to deal with it in case of multi-interval or multi-range is spread around the document. We would prefer a more consistent order and maybe combination of several articles	See Q§3.5	Not considered
	<b>ZA</b>	Requirements for when instruments may be verified in one location and then used in another e.g. instruments with $e > 3000$	Yes, will be dealt with in the chapter for verification; however, this issue is normally under national legislation	Considered in 8.3



Q-Item	State	Comment	Secretariat's response	Considered in the Working Draft
Q§3		Special items and Aspects		
3.1	AT	See 2.1 above		
	AU	See 2.1 above, also: The definition of tare-weighing device tends to imply (due to use of the word 'stores') that a stored tare value may be a tare value rather than a preset tare value. However T.5.3.1 indicates (by saying 'recalling from a data storage') that a stored tare value is a preset tare value.  <u>Proposal:</u> T.2.7.4.2 Tare-weighing device. Tare device that determines the tare value (i.e. avoid 'stores'). The definitions of Multi-interval and Multiple-range instruments (T.3.2.6 & T.3.2.7) need to be made clearer. <u>Proposal:</u> T.3.2.6 Multi-interval instrument Instrument having one weighing range which is divided into partial weighing ranges, each with different (verification) scale intervals, with the weighing range determined automatically according to the load applied, both on increasing and decreasing load. T.3.2.7 Multiple range instrument Instrument having two or more weighing ranges with different maximum capacities and different (verification) scale intervals for the same load receptor, each range extending from zero to its maximum capacity. The changing between ranges may be by manual selection or may be automatic with increasing load, but shall not be automatic with decreasing load (except at zero load) – subject to the detailed requirements of this recommendation.	No, as no other members commented on that issue "preset tare" seems to be a minor point. It is suggested not to open the discussion on the issue at this stage  No, this does not seem to yield a substantial improvement  No, no improvement	Not considered  Not considered  Not considered
	AU (contd.)			
	CA	There are subtle differences in terminology between Canadian requirements and R-76. For example, Canada uses the term device to refer to what R-76 calls an instrument, Canada uses the term zero setting mechanism whereas the R-76 equivalent is zero setting device, etc.. These differences in terminology would require an amendment to our specification to be able to adopt them.	Statement	
	CECIP	Update (compare with other OIML recommendations) to provide harmonisation between OIML documents, add specific modules etc.)	Yes	Considered
	CZ	See 2.1		
3.1 (contd.)	DE	There are no explicit definitions for: analog or digital indicators; data processing units; weighing modules. These definitions should be added.	Yes, general consensus	Considered in T.2.2.1 to T.2.2.6

	<b>IE</b>	The possibility of including critical change value as used in the MID should be discussed	No, the concept of "significant fault" has proved to be reasonable	Not considered
	<b>SI</b>	Terms defined in the terminology can be printed in capital letters through the rest of the recommendation	No, not usual OIML practice	Not considered acc. to vote
	<b>UK</b>	The preface to this section may need to be updated to refer to later issues of the two documents. The alphabetical index to the defined terms in the Terminology section should be included as in EN45501, and not "...published as a separate sheet..." See questionnaire Section 2.1 for NAWI/AWI definition comment.	Minor points, could be considered	See new introduction of terminology
	<b>US</b>	Revise T.1.2.7 to recognize the universal use of digital price-computing displays.	Query: Please supply a proposal	Not considered
	<b>ZA</b>	a) Define a pre-set tare device more clearly e.g. A device for keying in a tare value. (Not presetting (fixing) a value by balancing out a load) b) Define tare weighing device more clearly to distinguish between a tare balancing device and an instrument that indicates a negative value on the mass display when the load is removed after a semi automatic tare device has been activated. c) Define the absolute value of the MPE.	No, clear enough  No, clear enough  Minor point	Not considered  Not considered  See addition in 3.5.1
<b>3.2</b>	<b>AT</b>	We would rather prefer to exclude (portable) axle weighers. They are treated separately (not as NAWIs) in some countries including Austria	They are NAWI's; no treatment in a separate document	Not considered, see new points T.1.2.12, 4.19
	<b>CA</b>	This is similar to the application section specified within section 2 of Canada's Specifications relating to Non-Automatic Weighing Devices (1998).	Statement	
	<b>ZA</b>	Restrict to Self- and Semi Self Indicating instruments only. There is too much ambiguity about tolerances and not enough clarity on requirements for Non Self Indicating instruments, which should be covered in a separate document	No, the technical requirements in Ch.6 are needed for the modular approach and a separate document should definitely be avoided.	Not considered
<b>3.3</b>	<b>AU</b>	Clarification of the meaning of "metrological requirements" in the second paragraph of point 2.3Is necessary (is this intended to refer only to section 3 (titled "Metrological Requirements")). Our opinion is that the current statement is too loose. <u>Proposal:</u> Change to... "In particular, functions of electronic instruments not covered by this document may be allowed provided that they do not interfere with any performance, device or operation required by this recommendation. Use of such novel functions may be subject to national regulations."	No, no improvement	Not considered acc. to vote



	<b>CA</b>	We are in agreement with the principles of the recommendation. However there are instances, such as class IIIHD devices, where Canadian industry has requested a departure from the principles outlined within R-76.	Statement	
	<b>CEC IP</b>	It should be noted that loads are net loads 2.2 The last sentence should be deleted in its entirety. At best it implies that all machines will have unacceptable errors at light loads, this is not true of modern instruments.	Minor points, to be clarified	Considered in 2.2 No change, the error below Min depends on digital rounding
	<b>KR</b>	The unit, ct is just used for specific uses, especially for jewelry in OIML R76. However, it is not SI unit and therefore, it is thought it will be deleted in OIML Recommendation	No, it is allowed in the SI	Not considered acc. to vote
	<b>UK</b>	Curiously, EN45501, which is used only in now fully-metric Europe, allows in its Section 2.1 for imperial weights (lb and oz), whereas R76, which presumably could be used in countries where imperial weights are still in use, only allows metric units. Should the lb and oz be included in R76, for those countries still using those units?	No: 1) all relevant OIML members are signatories of the Metre Convention, 2) lb and oz were only allowed by an EU regulation for an expired transition period	Not considered acc. to vote
<b>3.4</b>	<b>AT</b>	a) amend class I requirements as outlined in 2.2;  b) delete limits for $p_i$ in 3.5.4.2	a) See response to Q\$2.2  b) Will be considered when revising the chapter on modular approach	a) No change, the smallest weight acc. 3.7.1 and R111 is 1 mg  b) see changes in 3.10.2
	<b>AU</b>	See earlier comments		
	<b>CA</b>	Differences in metrological requirements include: Accuracy Class; Canada does not specify a minimum $e$ for class I or II devices (we are however in the process of updating our specification to harmonize with R-76 for class II devices); Canada has created accuracy class IIIHD to accommodate industry needs and Canadian accuracy class IIII devices are allowed a maximum of 1200 scale intervals. Limits of Error: Canada applies a fourth step ( $\pm 5e$ in-service) for class III & IIII devices respectively ( $4\,000 < m \leq 10\,000$ and $400 < m \leq 1\,200$ ); the IIIHD tolerance is $1e$ for $0 \leq m \leq 500$ and we add $\pm 1e$ for each additional 800e or part thereof, up to a maximum of $22e$ (in-service). Modules: Canada applies 0.7 times the acceptance limit of error, R-76 has more extensive requirements for the apportionment of errors. Eccentric loading: R-76 specifies how to apply loads, Canada's Field Inspection Manual specifies the amount of standards and placement. Minimum Capacity: Canada specifies a minimum capacity (minimum net weight) that is based on the commodity weighed rather than the device accuracy class.	Statement	

<b>3.4</b> (contd.)	<b>CECI</b> <b>P</b>	<p>a) Instead of Table 6 use relative error system.</p> <p>b) Allow 3.4 “Auxiliary indicating devices” also for class III</p> <p>3.4.1 Possibility of an auxiliary indicating device on the left side of decimal sign if there is no insignificant zero</p> <p>Eccentricity 3.6.2 – specify whether the difference at zero position has to be taken into account during the tests</p> <p>3.6.2.4 – the most concentrated rolling load has to be defined</p> <p>3.7.3 Substitution of standard weights We believe this clause should be re-examined at length. There are many considerations to be taken into account, such as the much higher Max values than 1t for some modern machines, the practical problems of carriage of large amounts of standard weights, the availability of alternative methods that can meet the requirement to have an uncertainty of test loads not exceeding 1/3 of mpe. )</p> <p>3.7.3 testing for high capacity instruments only at the place of use possible</p> <p>3.8.2.2 (A.4.8+8.3.3) No measurement of discrimination possible for instruments with <math>d \leq 1\text{mg}</math>. For all electronic instruments discrimination tests only during type approval testing because it refers to design and not to individual instruments Or better: This test should be deleted for electronic self-indicating instruments. It serves no useful purpose, and the discrimination characteristic is determined during other testing. If no deletion give an alternative to the existing procedure:</p> <ul style="list-style-type: none"> <li>- Put a weight on the receptor, indication I</li> <li>- Add by 1/10 of e, weights up to indication go clearly to I + 1</li> <li>- Take off 0,1 d up to go clearly to the indication I</li> <li>- After put on the receptor, without shocks, a weight equal to 1,5 d</li> <li>- The indication will go to I + 2</li> </ul> <p>This method will reduce the quantity of weights for the detection of indication steps.</p> <p>3.9.2.2. Where the manufacturer chooses to limit the temperature range of his instrument, it should not be restricted to a minimum range, e.g. 30 C for Class III instruments.</p>	<p>a) see comment und. Q§2.3</p> <p>b) New idea: see proposal under Q§2.2.4 Minor point</p> <p>Yes, to be discussed</p> <p>Yes, to be considered</p> <p>To be discussed</p> <p>Minor point, to be discussed</p>	<p>Vote Q§2.3: No change of the error regime</p> <p>Not considered acc. to vote No change, could lead to confusion</p> <p>Considered in A.4.7</p> <p>Not considered</p> <p>Changes in 3.7.3</p> <p>Changes in 3.7.3</p> <p>Changes in 3.8.1 to 3.8.2.2</p> <p>See, two versions in A.4.8.2. We prefer version 1.</p> <p>No change, class III could also be used outside</p>
<b>3.4</b> (contd.)	<b>CN</b>	<p>(3.8.2.2) For the discrimination of digital indication, the requirement shall be different for <math>e=d</math> and <math>e \neq d</math>.</p>	<p>Discrimination will be discussed</p>	<p>No change, see 3.8.2.2</p>
	<b>CZ</b>	<p>We propose to modify the clause 3.6.2.4. In practice is very difficult to perform this kind of test on weighing instruments with the maximum capacity of more than 50t. For those weighing instruments we propose to be possible to decrease the required rolling loads to conduct this test.</p>	<p>Yes, should be discussed</p>	<p>Not considered</p>

	<b>DE</b>	Check and improve tilt requirements in 3.9.1. Delete frequency requirements for mains power supply in 3.9.3	Yes, general consensus	Considered in 3.9.1.1 and 3.9.3
	<b>IE</b>	3.9.1 on tilting needs to be revised due to experience with refuse trucks.	Yes, will be considered	Considered in 3.9.1
	<b>NL</b>	Please refer to our answer to 2.6. Furthermore, we feel there is inconsistency between R 76 and R 60: In R 60, there is a requirement/test for influence of changes in atmospheric pressure on no load condition, but in R 76 there is no such requirement/test. So we suggest to: - either add such a test in R 76 (especially if the future D 11 contains such a test), - or remove this test from R 60.	Yes, will be considered  Minor point, almost irrelevant when applying the modular approach	To 2.6: no change  No change, a NAWI can be set to zero
	<b>SI</b>	3.8.2.2 can only be performed for $d \geq 10$ mg. That can be mentioned in the text.	Yes, will be considered	Changes in 3.8.1 to 3.8.2.2
	<b>UK</b>	Part of the footnote to Section 3.3 can be slightly misleading, and perhaps need a few words of better explanation. The part below the heading "The maximum permissible errors on initial verification..." is wrongly understood by some people to show, incorrectly, the limits of each partial weighing range, whereas it actually shows just a set of example loads. Section 3.3.4 is not well understood, and needs clarification.	No, it's clearly marked as an example	considered in 3.3.3
	<b>US</b>	See comments in 1.2. Paragraph 3.5.5 should be amended to allow testing of modules.	Yes	Considered in 3.10.2
<b>3.4</b> (contd.)	<b>ZA</b>	(3.4): Add a note referring to 4.4.3 and T2.6 explaining that an extended indicating device is not regarded as an auxiliary indicating device.	Minor point	Considered in 3.4.1
		(3.5.2): Make clear that this applies to in-service inspection only and not verification or delete as it is addressed in 8.4.2.	No, depends on national legislation	Not considered
		(3.5.5): Modular concept only for Pattern Approval. Remove 1 <sup>st</sup> Paragraph of Paragraph 3.5.5: „Where a load measuring device is tested .....“.The last Paragraph in Par 3.5.5 prevents modular testing for verification anyhow.	Yes, see comments above	Considered in 3.10.2
		(3.6): Make clear that this only applies to tests prescribed in 3.6, unless otherwise prescribed.	No, it is clear already	Not considered
		(3.8): Discrimination test for analogue scales not practical. Why can't the same requirements as for digital scales not be applied?	Query: Please provide more information.	Not considered
		(3.9): a) Clarify the wording „and additionally it shall comply with 3.9.1 and 3.9.4“ as it is obvious that an instrument must comply with the requirements.	Minor point	Considered in 3.9
		(3.9): b) Add requirements for battery operated instruments.	Yes, to be considered	Considered in 3.9.3
		(3.9): c) Clarify which clauses of 3.9 are applicable to mechanical instruments e.g. tilting 3.9.1 and temperature 3.9.2.	Yes	Considered in 3.9

		(3.9.1.1): Clarify tilting to 5% or is this degrees from level? Why not specify in degrees or gradient such as 1/1000 as is done in the other paragraphs.	Yes, will be discussed	Considered in 3.9.1.1
		(3.9.5): It is suggested that the example become a requirement	No, too restrictive	No change
3.5	AT	Amend 4.12 to better conformity with "compatibility of modules data sheet" of Welmec guide 2 (common application)	Yes, belongs to the revision of chapter 3.5.4.2	See new Annex E
3.5 (contd.)	AU	Printing (formats and content) is an aspect that is likely to be subject to differing national legislation/requirements. <u>Proposal:</u> 4.4.5 Printing (this should also apply to 4.6.11 and 4.17) Add to this clause. "The format and content of printed information may be subject to national legislation". The use of "G" or "B" to designation Gross should be restricted according to appropriate language in use. For example it is not acceptable for "B" to be used in Australia, although 4.6.11 could imply that it should be. <u>Proposal:</u> 4.6.11 Printing of weighing results Add a note: "Note: National legislation may restrict the designation of Gross to be either "G" or "B". The important signs such as "NET", "G", "B" as well as the zero indicator "ZERO" are required, but no requirement regarding their size or visibility is given. We believe some basic requirements should be given.	No, this argument could apply to each requirement	Not considered
	AU (contd.)	<u>Proposal:</u> 4.6.11 Printing of weighing results Add a note: "Note: National legislation may restrict the designation of Gross to be either "G" or "B". The important signs such as "NET", "G", "B" as well as the zero indicator "ZERO" are required, but no requirement regarding their size or visibility is given. We believe some basic requirements should be given.	No, see comments made above	Not considered
	AU (contd.)	<u>Proposal:</u> The appropriate place for the requirement is not clear (perhaps in 4.2). Add a point: "Signs for NET, G, B, T, and ZERO shall (where required) be clearly visible – the minimum height of the designations (i.e. the letters) shall be 3 mm. The rounding of pre-set tare values is a quite frequent problem area. It is not uncommon for instruments to display a rounded pre-set tare value, but to use an un-rounded value internally. This does not satisfy the requirement of 4.7.1. <u>Proposal:</u>		Not considered
		4.7.1 Scale interval (Preset tare device) Alter the first sentence to: "Regardless of how a preset tare value is introduced into the device, its scale interval (both the displayed value and its internal value – i.e. that subtracted from the Gross weight) shall be equal or automatically rounded to the scale interval of the instrument. A test procedure to ensure that this requirement has been met should also be included. It is not clear what is acceptable to satisfy "It shall be possible to indicate the pre-set tare value at least temporarily". We have accepted that the removal of load from the receptor and consequent display of a negative number meets this requirement, however it is not clear whether the intention was actually to require a "pre-set tare display button" or similar. <u>Proposal:</u>	No, see comment on PT above	Not considered
		4.7.3 Indication of operation (Preset tare device) Alter to: "... It shall be possible to indicate the pre-set tare value at least temporarily: The display of the pre-set tare value (preceded by a – sign) when the load is removed from the load receptor is an acceptable solution."	No, see comment on PT above	Not considered

3.5  
(contd.)AU  
(contd  
.)

load receptor is an acceptable solution.”

It is not clear whether “PT” is required to be indicated whenever the pre-set tare value is displayed, or whether it is only required when the pre-set tare value is printed. As the mention of “PT” is within a paragraph which refers to 4.6.11 (that relates to printing) our interpretation has been that “PT” is only required for printing.

Proposal:

4.7.3 Indication of operation (Preset tare device)

Add a note: “Note: The designation ‘PT’ is required for printing but is not required when displaying the pre-set tare value.”

It should be made clear that the designation of the pre-set tare value should be printed with the value.

Proposal:

4.7.3 Indication of operation (Preset tare device)

Alter to: “if the calculated net value is printed, at least the pre-set tare value (and its designation) is printed as well ....

4.11.4 Identification of the combinations used.

We feel there is a need for more detail here. In our requirements we have added. “Weighing instruments with two or more load receptors which can be used to determine the load on any individual receptor, or the total load for all receptors, shall have a visual indicator or indicators which display individual receptor loads and the total load for all receptors as selected.

The calculations in 4.12.3 relating to vmin apply a factor of the “square root of N”. We believe that on the same basis the “square root of N” should be used in the calculations of 4.12.2. relating to DR.

Proposal:

4.12.2 Maximum number of load cell intervals

Alter to use “square root of N” in calculations relating to DR.

The requirements of 4.14.4 (pre-set tare device) refer to the first paragraph of 4.14.3.2 (semi-automatic tare device). We feel there is some difficulty in determining what is acceptable and what is not. For example we believe that it is acceptable (when there is no load on the load receptor) for a single operation to both cancel a tare (or pre-set tare) value and acquire a new pre-set tare value which may be less than (or greater than) the original value.

Proposal:

4.14.4 Pre-set tare device (Instrument for trading direct with the public)

Add: “Acceptable solution: It is acceptable (when there is no load on the load receptor) for a single operation to both cancel a tare (or pre-set tare) value and acquire a new pre-set tare value which may be less than (or greater than) the original value.”

The requirements of 4.14.4 (pre-set tare device) for pre-set tare value to be “indicated as a primary indication on a separate display which is clearly differentiated from the weight display”, does not unambiguously require that the value be displayed permanently (it has been suggested that it could be displayed on demand). We believe that this should be made unambiguous.

Proposal:

4.14.4 Pre-set tare device (Instrument for trading direct with the public)

Alter to read “...the pre-set tare value is indicated permanently as a primary indication ...”.

The requirements of 4.14.6 (visibility) state that for digital devices that display primary indications, “the numerical figures on either set shall be of the same dimension and at least 10

Not considered

Minor point, but may be discussed

See change in 4.11.4

Yes, will be considered when revising 4.12

See new para E.2 of Annex E

No, see comments on PT above

Not considered

No, see above

Not considered

No, see above

Not considered

No, no improvement

Not considered

3.5  
(contd.)AU  
(contd.)  
.)

mm high...". The set(s) that are being referred to here are undefined.  
In the following assume all figures are >10mm.  
This requirement could mean that

Vendor		
kg	\$/kg	\$
0.00	0.00	<b>00.00</b>

Customer		
kg	\$/kg	\$
0.00	0.00	<b>00.00</b>

is unacceptable, or that

Vendor		
kg	\$/kg	\$
0.00	0.00	00.00

Customer		
kg	\$/kg	\$/kg
<b>0.00</b>	<b>0.00</b>	<b>00.00</b>

is unacceptable (according to how 'set' is defined).

It may even just mean that

Vendor		
kg	\$/kg	\$
<b>0.00</b>	<b>0.00</b>	<b>00.00</b>

Customer		
kg	\$/kg	\$
<b>0.00</b>	<b>0.00</b>	<b>00.00</b>

is unacceptable. (as the PT value is a primary indication the same principles will apply to its display)

Proposal (as a starting point for discussion)

#### 4.14.6 Visibility

Alter the second paragraph to read: "On digital devices that display primary indications, the numerical figures shall all be of at least 10 mm high (with a tolerance of 0.5 mm). A set of primary indications comprises the weighing result, information about correct zero position, tare and pre-set tare operations, and (if applicable) unit price, price-to-pay, number (for non-weighed items) and price totals.

For any set of primary indications:

- a) the digits comprising any individual value shall be of the same size,
- b) the values of weight and price data (including price totals) shall be of the same dimensions,
- c) the values of weight and price data may be provided with greater dimensions than other primary indications (i.e. unit price, tare, pre-set tare) provided the dimensions of the smallest digits are no less than one-half the dimensions of the larger.

Where two sets of primary indications are provided (e.g. one for the vendor and one for the customer), the dimensions of the primary indications provided for the customer shall be no less than those provided for the vendor.

Point 4.15.3 allows the interval of price-to-pay to be set by national regulations, however it requires rounding to the nearest interval of price-to-pay without indicating how to handle a result falling midway in the interval.

Proposal: (the wording needs further work but this is a starting point)

#### 4.15.3 Price-computing instrument

Add: "Rounding shall be such that a result of –

>0 to <0.5 interval of price-to-pay shall round down to 0,

0.5 to <1 interval of price-to-pay shall round up to 1, and

0.5 interval of price-to-pay may round either up or down."

Point 4.15.3 indicates that unit price is restricted to Price/100g or Price/kg. Australia does not allow Price/100g (we believe that the use of "or" permits this). We believe the situation should

No, no improvement

Partly considered, see new para 4.13.6

No, no real improvement

Not considered

3.5  
(contd.)AU  
(contd.)

be made clear. Also, currently there is no requirement regarding the interval of unit price (although to date all instruments we have seen have all had the interval the same as that of price-to-pay, we believe this should be made a specific requirement).

Proposal:

## 4.15.3 Price-computing instrument

Replace "The unit price is restricted to Price/100g or Price/kg or both (selectable), subject to national regulations. The interval of unit price shall be the same as the interval of price-to-pay."

The requirements of 4.15.3 (price computing instrument) indicate that the same data shall not be printed twice on the ticket for the customer. However the extent to which the instrument should include measures to prevent this is not clear – we understand that some authorities require measures such as not allowing printing/totalisation of another weight until after the instrument has returned to zero. We believe that if such measures are intended they should be mentioned explicitly. Our opinion is that the requirement only requires that when 'print' or 'add' is pressed, only the one set of weight & price data is added or printed.

Proposal:

## 4.15.3 Price computing instrument

Alter "The same data ....for the customer" to read: "The same data shall not be printed twice on one ticket for the customer. Note: It is acceptable for the instrument to allow printing of a second label."

The requirements regarding to totalisation and price-labelling instruments require some further elaboration. Firstly the terms "ticket" and "label" are used but are not defined. However T.1.2.9 relates price-labelling instruments to prepackages – we have therefore suggested the terminology shown below. Note: This terminology makes the terms independent of whether the ticket or label has an adhesive backing.

Proposal:

Add new terminology:

"T.1.3.3 Label – A printed output of the weighing (and associated) results intended to be attached to a prepackage.

"T.1.3.4 Ticket – A printed output of the weighing (and associated) results which is not intended to be attached to a prepackage.

Also, alter the first sentence of 4.15.2 to say ".... On one or several tickets or labels" to be consistent with the mention of both later in 4.15.4.2.

To clarify some issues regarding totalisation we suggest that some notes be added. These notes are intended to clarify the intention in areas where we have found some confusion within industry.

Proposal:

Add notes to 4.15.4.2:

"Note:

Totalisation may only be performed if a ticket or label intended for the customer is printed (as required by 4.15.4).

b) The requirements of other relevant points also apply – so that (for example) for each item totalised, weight, unit price, and price-to-pay shall be printed, as required by 4.15.3.

c) Where the totalisation is of transactions on several tickets or labels, the prices-to-pay that are totalised do not need to be printed on the same ticket or label as the total.

d) The requirement for the separate price total ticket or label to have an appropriate reference to the commodities, may be satisfied by reference to the number of labels or tickets

No, no real improvement

Not considered

No, no real improvement

Not considered

No, no real improvement

Not considered

No, no real improvement

Not considered



3.5  
(contd.)

AU  
(contd  
.)

contributing to the price total (e.g. 3 transactions).”  
There are differing approaches to (d) above and we believe it would be desirable to eliminate these differences. For example:

Ticket 1			Ticket 2			Ticket 3		
Meat			Cans of Soup			Tray of Cakes (4 cakes)		
kg	\$/kg	\$	pcs	\$/ea	\$	pcs	\$/ea	\$
1.500	2.00	3.00	3	1.22	3.66	1	2.50	2.50

The following are three possible total tickets

Total Ticket 1	Total Ticket 2	Total Ticket 3
3 items	5 items	8 items
\$9.16	\$9.16	\$9.16

We believe that Total Ticket 1 is the preferred outcome.

3.5  
(contd.)

CA

Canada does not specify technical requirements pertaining to the design of a device. We do however specify a durability requirement for devices of 1000 kg and less. This differs from the OIML requirements of 100kg.

Statement



CECI P	4.1.2.2. To be reviewed, „accidental breakdown“ requirement unclear.	Minor points, to be discussed	Not considered, we see no problem See new Annex E
	4.12.1 Determination of „Q“ to be defined		
	4.7 Preset tare $\geq$ Max <sub>1</sub> should be possible		
	4.7 Preset tare confirm with OIML R51 3.3.4		
	Effects of rounding of Gross/Net/Tare especially in multi-interval instruments should be discussed		
CH	4.12.3) Some more explanations on the origin and the application of the formula could be useful. What is recommended in this case for digital load cells?	Yes, will be discussed	Considered in E.2.7
CZ	We propose to amend the clause 4.17 Price-labelling instrument by requirements for weighing instruments which are normally use for direct sale to the public but they are also able to provide temporally labelling of prepackages.	No, two modes of operation are already covered	Not considered
DE	More exact definition of stable equilibrium in 4.4.2 and 4.4.5 (see WELMEC). Adapt Chapter 4.12 concerning load cells to OIML R60 (2000)	Yes, will be considered	Considered in T.4.6, 4.4.2, 4.4.5, A.4.12
SE	A small working group should go through all technical requirements and try to change them to performance requirements	Query: Please explain in more detail	
SI	4.12 can be simplified. Stated requirements can form a part of “modular concept” chapter	Yes, general consensus	See new para E.2 of Annex E

<p><b>3.5</b> (contd.)</p>	<p><b>UK</b></p>	<p>In R76 Sections 4.1.2.4 and 4.1.2.5, is there confusion between "securing" and "sealing"? (WELMEC regards these as being different, whereas R76 appears to regard them as being the same.)</p> <p>In R76 (and EN45501) Section 4.2.2.2, what does "A digital indication shall display at least one figure beginning at the extreme right" mean?</p> <p>In R76 (and EN45501) Section 4.4.5, correctly "Printing shall be inhibited when the equilibrium is not stable", but then stable equilibrium is defined by what happens <u>after</u> printing! This seems illogical, unless the stable equilibrium statement is intended as a test rather than as a definition, in which case perhaps it should be states as such. Similarly, Section 4.4.6.</p> <p>In Section 4.5.1, is it worth clarifying what 4% means, as some people have taken it to mean plus or minus 4%, making a total range of 8%. Also, some manufacturers set their instruments to be, for example, plus 3% and minus 1%. Should their ability to do this be made clear, as some others assume that only plus and minus 2% is acceptable. Similarly for the 20%.</p> <p>In Section 4.5.7, R76 says "...not more than 0.5 d/second." Whereas EN45501 says "...not more than 0.5d within one second." These do not quite mean the same, as the first is a maximum rate of change over any period while the second is a maximum change in a one-second period. Does this matter?</p> <p>Section 4.12.1 (in both R76 and EN45501) refers to the Q-factor, but gives no guidance on how to evaluate it. The WELMEC 2 guide gives a suggestion for how this can be done. Is it worth incorporating this into R76?</p> <p>R76 Section 4.15.3 refers to metric units only, whereas EN45501 refers to both metric and imperial (lb and oz). Should R76 also refer to imperial for countries that still use them?</p> <p>R76 has Section 4.18 whereas EN45501 does not. Is it still needed?</p>	<p>Yes, will be clarified</p> <p>Yes, will be clarified</p> <p>No, no practical relevance</p> <p>No, the wording of "overall effect" is sufficiently clear.</p> <p>No, it doesn't.</p> <p>Yes, will be considered</p> <p>See comment above</p> <p>Yes, 4.18 is still needed in R76. It is not mentioned in EN 45501 because it is not mentioned in 90/384/EEC.</p>	<p>Considered in 4.1.2.4</p> <p>Not considered</p> <p>see 4.4.2 "stable equilibrium"</p> <p>Not considered</p> <p>Not considered</p> <p>See E.2 of Annex E</p> <p>Not considered</p> <p>Not considered</p>
	<p><b>US</b></p>	<p>See comments in 1.2. Below is paragraph 4.14.6 from R-76. The U.S. recommends it be revised to allow the use of the graphical displays seen more often in today's instruments. A suggested rewrite is: (added text is <u>underlined</u>, deleted is <del>crossed-out</del>)</p> <p>4.14.6 Visibility: All primary indications shall be displayed clearly and simultaneously to both the vendor and the customer. On digital instruments that display primary indications, the numerical figures <u>displayed to the customer on either set</u> shall be <del>of the same dimension and</del> at least <u>10 9.5 mm</u> high, <del>with a tolerance of 0.5 mm</del>. On an instrument to be used with weights it shall be possible to distinguish the value of the weights.</p> <p><del>Acceptable solution</del></p> <p><del>The primary indications should be grouped together in two sets of scales or displays.</del></p> <p>Justification: The item specifically addressed is the required text size for the vendor, 9.5 mm is a very large size for an operator who is less than an arms length away. The first sentence statement "displayed clearly" should be sufficient for the vendor.</p>	<p>New idea: to be commented on by others members, see question 4) in Summary under Q\$3.5</p>	<p>Considered, see new para 4.13.6</p>

3.5 (contd.)		Alternate thoughts: Non-digital displays are required to be readable from 0.8 meters away (T.5.4.4), why is the distance effectively greater for a digital display? Should the "Acceptable solution..." text be deleted? There is a difference of opinion in the interpretation of this text. Does it mean the customer display must be identical to the operator display?		
	ZA	(4.2.2.2.): For decimal indicator clarify dot on the line is required.  (4.2.3): This seems to be out of place as it only applies to digital indicators. Either clarify this and put 4.3.3 for analogue indicators here as well or move to 4.4. There is no clarity on whether or not a digital instrument may indicate below zero without a tare device being in operation.  (4.3); (4.2.5) also applies: " to those in 4.2.1 through 4.2.5".  (4.4.5) Although this clause falls under digital indicating and printing devices it is assumed that it applies to mechanical printers this should be clarified. If it does not apply then an equivalent requirement should be inserted.  (4.15.5) Does this only apply to instruments with price indications? Suggest it also applies to instruments without price indication and therefore should move to 4.14	Minor points, will be considered	Considered in 4.2.2.2  Considered in 4.2.3  not considered  not considered  Considered in 4.13.11
	AU	We believe it is worthwhile providing further detail in regard to 5.3.1 (Display Check), as there has been a tendency to treat the 'power-off' period prior to switch-on of indication as checking the 'non-active state', whereas in fact it does not do so. Proposal: 5.3.1 (Display Check) Add a note and an acceptable solution: "Note: This check <u>is</u> required for displays such as LCD matrix or CRT. Acceptable solution: At switch-on of indication turn on all elements of the display (including signs such as NET, ZERO etc) for 2 seconds, and then turn off all elements of the display for 2 seconds."	No, we should avoid "overregulation", ie. detailing requirements for special technologies	Not considered  Not considered
	CA	Voltage variation: Canada does not specify a range of operation for DC voltage variation. We are consistent with R-76 for AC voltage variation. Over-capacity: the Canadian requirement is 105% of capacity for devices other than computing and postal scales; OIML is +9 intervals for everything	Statement	
	DE	OIML D 11 to be considered; WELMEC Documents to be considered	Yes, general consensus	ID 11 is considered
3.6 (contd.)	DK	EMC tests should be updated	Yes, general consensus	Considered in Annex B
	FI	EMC tests should be in line with existing standards, immunity test at 10 V/m should be included for industrial purposes	Yes, to be discussed	Considered in Annex B
	FR	ID 11 to be considered	Yes, general consensus	Considered in Annex B

	<b>NL</b>	Several requirements from (5) should not only apply to electronic weighing instruments, but to all kinds, including mechanical ones. So they might be moved from (5) to (3) or (4). Also refer to the actual discussion about the scope and title of OIML D 11.	Query: Please identify the respective requirements	
	<b>UK</b>	Section 5.3.1 demands a switch-on display test, but this is not adhered to in the EU for displays such as VDUs, as it is argued that it is not necessary. Should the text "If the failure of a display element could give misleading readings, then..." be inserted into the beginning of this sentence?	No, we shouldn't "overregulate"	See additions in 5.3.1
<b>3.7</b>	<b>AU</b>	These are now quite uncommon in Australia. All instruments in use for trade require pattern approval, so that the exemption provided in 8.1 does not apply in Australia	Statement	
	<b>CA</b>	Canada does not specify design criteria.	Statement	
	<b>CN</b>	(6.8) Instruments with platforms: The maximum capacity of the instrument shall be more than 3kg. The ratio between the weighed load and the equilibrium load shall be add 1:5 and 1:50. In our country that instruments have been produced for almost 30 years and conform with OIML R76.	Yes, it is even suggested to delete 6.8.1	Not considered: Vote Q\$3.7 to maintain 6.8.1
	<b>PL</b>	In 6 we propose this item be excluded or limited in R76. According to the directive 90/384/EEC mechanical NAWIs are not subject of type approval and there is almost not production of such kind of weighing instruments.	No, because 1) mechanical instruments are still produced, and 2) chapter 6 is often referred to for the mechanical parts in connection with the modular approach	Not considered acc. to vote
	<b>ZA</b>	Section 6 does not only apply to Non Self Indicating instruments as it deals with knives, bearings, lever construction etc. We suggest that it covers only Self and Semi Self Indicating instruments where MPE's are easily determined from e. This would include steelyards or instruments who incorporate steelyards and beam scales with denominated graduations. Truly Non Self Indicating instruments should be dealt with in a separate document	No, no separate document	Not considered acc. to vote
<b>3.8</b>	<b>AT</b>	Allow for software solutions for the markings near the display similar to 3,1,15 of Welmec guide 2	Yes, to be considered	Considered in 7.1.4
<b>3.8</b> (contd.)	<b>AU</b>	It is required by 7.1.4 that descriptive markings: "shall be grouped together in a clearly visible place ...". It seems increasingly common for the Serial Number, pattern approval mark (which may depend on national regulations), and name or mark of manufacturer's agent for an imported instrument, to be marked separately from the other data. We believe this should be acceptable provided that the marking is clearly identifiable as the serial number (and is in a clearly visible place). There is also a trend for descriptive markings to be located beneath the instrument load receptor (i.e. not in a clearly visible place). <u>Proposal:</u> 7.1.4 Presentation of descriptive markings Alter the second paragraph to read: "They shall be grouped together in a clearly visible place either on a descriptive plate fixed to	Yes, could be discussed when revising 7.1.4	Considered in 7.1.4

		<p>the instrument, or on a part of the instrument itself – except that the serial number, pattern approval mark, and name or mark of manufacturer's agent for an imported instrument, may be separate from the other descriptive markings (but they should be provided in the same vicinity).</p> <p>The descriptive markings may be located below the instrument platter where the following conditions are met:</p> <ul style="list-style-type: none"> <li>a) the load receptor is easily removable by the user without tools,</li> <li>b) the load receptor weighs less than 10 kg, and</li> <li>c) A notice stating "descriptive markings below platter" (or similar wording) is provided in letters at least 2 mm high, in a location which is clearly visible to the user in normal operation.</li> </ul> <p>We believe that descriptive markings should include a model number, and that manufacturers have a responsibility to provide model numbering and marking schemes which allow identification of instruments/modules with differing characteristics.</p> <p>7.1.5 requires further elaboration. In the case of modular instruments each module may require markings of manufacturer, importer, serial number, pattern approval mark, as well as other applicable markings (Max, Class ...). Also as different models of module may have different performance characteristics a model number should be included which allows identification of applicable characteristics.</p>	Yes, must be discussed when revising the chapters on modular approach and on marking	Considered in 7.1.5.3 and 7.1.5.4
	<b>CA</b>	For compulsory markings, Canada does not require Mim to be marked, but does requires the approval number to be marked	Statement; Question: should "Mim" read "Lim"?	
<b>3.8</b> (contd.)	<b>CECI P</b>	<p>To be discussed in total</p> <p>Language independent and harmonised markings (incl. 7.1.3)</p> <p>7.1.4.b No need for the 80 mm width constraint</p> <p>7.1.4 c Fixing requirements are outdated. Replace with general requirement regarding the permanence of fixing.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>See changes in 7</p> <p>Considered in 7.1.3</p> <p>Considered</p> <p>Considered in 7.1.4, acceptable solution c)</p>
	<b>CH</b>	(7.1.4) The descriptive marking on a descriptive plate is not necessary. The descriptive marking near the display is sufficient	Yes, will be considered	Considered in 7.1.4
	<b>DE</b>	In Chapter 7.1.4 it should be added that instead of usual hardware solutions also software solutions can be optionally chosen to present certain descriptive markings (to be defined).	Yes, general consensus	Considered in 7.1.4
	<b>NL</b>	Our proposal and rationale is to allow (some of) the markings to be electronic and to be called up when necessary, so not visible at all times.	Yes, will be considered	Considered in 7.1.4

	<b>UK</b>	In Section 7.1.2, EN45501 refers special temperature limits to Section 3.9.2.2, whereas R76 does not. Should it? Section 7.1.4 of R76 (Section 7.1.3 of EN45501) demands that the markings Max, Min, e = (and d, if d is not equal to e) "shall <u>also</u> be shown near the display...if they are not already located there." WELMEC has agreed (WELMEC 2 guide) that if these <u>are</u> shown near the display, it is not then necessary for them also to be shown on the rating plate.	Minor point, purely editorial  Minor point; however it will be considered when revising the chapter for markings	Considered in 7.1.2 H  Considered in 7.1.4
<b>3.9</b>	<b>AT</b>	a) Delete "subsequent verification"...see point 2.5  b) Amend references in 8.3.3: 4.5.2 and 4.6.3 instead of 4.6.2 and 4.7.3	a) No, but chapter for verification will be revised b) Yes	Not considered acc. to vote  Considered in 8.3.3.
	<b>CA</b>	Canada requires pattern approval and initial inspection prior to a device being used in trade. The declaration of conformity is provided in the form of a Notice of Approval and indication that the device was initially inspected is evident when stamped with a Canadian Flag and a sticker applied to the device. A certificate of inspection is also issued to the device owner. There is no requirement for subsequent verification, however it is the owners responsibility to ensure that devices are accurate at all times.	Statement	

3.9 (contd.)	CECI P	<p>Amend 8.1 to require States to adopt a system of in-service control, preferably requiring periodic (re)verification; type approval and initial verification are meaningless unless supported by in-service controls during the working life of the instrument.</p> <p>3.8.2.2 (A.4.8+8.3.3) No measurement of discrimination possible for instruments with <math>d \leq 1\text{mg}</math>. For the rest of electronic instruments discrimination tests only during type approval testing because it refers to design and not to individual instruments Or better: This test should be deleted for electronic self-indicating instruments. It serves no useful purpose, and the discrimination characteristic is determined during other testing. If no deletion give an alternative:</p> <ul style="list-style-type: none"> <li>- Put a weight on the receptor, indication I</li> <li>- Add by 1/10 of e, weights up to indication go clearly to I + 1</li> <li>- Take off 0,1 d up to go clearly to the indication I</li> <li>- After put on the receptor, without shocks, a weight equal to 1,5 d</li> <li>- The indication will go to I + 2</li> </ul> <p>This method will reduce the quantity of weights for the detection of indication steps.</p> <p>8.3.3. delete discrimination test for digital instruments</p> <p>For (A.4.4.1) weighing test is required "progressively increasing and progressively decreasing load" in order to detect hysteresis. There exist other test methods to detect hysteresis and the requirement to apply progressively increasing and progressively decreasing load needs an unnecessary number of weight pieces in weight sets used in the field. Therefore for cases 8.3.3 and 8.4 we suggest to say in A.4.1 weighing test, second last section: "It should be noted that when loading or unloading weights the load shall be progressively increased or progressively decreased but in cases of 8.3 (8.3.3) initial verification or 8.4 subsequent metrological control other equivalent procedures are accepted as well to detect hysteresis.</p>	<p>To be discussed</p> <p>Yes</p> <p>Yes, will be considered; see proposal in the Summary under Q§3.8</p>	<p>Not considered, no change</p> <p>Considered in 8.3.3</p> <p>Not considered, only the original test version corresponds with the requirements</p> <p>Considered in 8.3.3</p> <p>change in A.4.1</p>
	CZ	<p>We propose to amend the clause 8.3.3 with the following paragraph (can be put after the 7<sup>th</sup> paragraph): If the instrument indicates during the tests weighing results which are out of the specified tolerances the verifying authority should arrange for a span adjustment and then repeat the tests. Note: see also 2.5</p>	No, this matter is out of the scope of R76	Not considered
	DE	— List of tests necessary for initial verification and subsequent metrological controls to be examined	Yes, consensus	Considered in 8.3.3
3.9 (contd.)	FR	List of tests necessary for initial verification and subsequent metrological controls to be examined	Yes, consensus	Considered in 8.3.3
	NL	In the case of (initial) verification: For electronic instruments some tests seem to be not very relevant: Discrimination and accuracy of zero and tare setting. Further the common practice is to preload the instrument once before doing all verification tests.	Yes, could be considered when revising chapter for verification	See changes in 8.3.3

[illegible]



	A.5.4 Voltage variation: reference to actual IEC standards	Refer, however, to the Summary, question 4) under item Q\$3.10	Not considered acc. to vote
	A.6. Endurance testing. This is a manufacturer quality test rather than a type approval test, it should be deleted.		
DE	Clarification of some procedures (eg. eccentricity tests). The tare test according to A.4.6.1 does not specify the tare load (with the exception of tare load near maximum tare load when testing the additive tare. Therefore the following proposal: Subtractive tare: 1/3 and 2/3 of maximum tare; Additive tare: 1/3 and 3/3 of maximum tare	Yes, will be considered	Considered in A.4.6.1
FR	Clarification of some procedures (eccentricity tests)	Yes, consensus	Considered in A.4.7
NL	Below 1 g performing a discrimination test is practically impossible.  The eccentricity test should be described more clearly.  Especially, it is not clear whether the zero-error is to be compensated or not.	Yes, could be discussed Ditto  ditto	Considered in 3.8  Considered in A.4.7  Considered in A.4.7
SE	A small working group should go through all testing procedures and update with actual practice in testing including software.	Query; please explain in more detail	

<b>3.10</b> (contd.)	<b>UK</b>	<p>For R76 Sections A.4.7.1 and A.4.7.2, see comment in Section 2.3 above.</p> <p>Section A.4.4.1 requires testing at Max. However, health and safety legislation can sometimes prevent this because of safety implications. What is then to be done?</p> <p>In Section A.4.4.1, if there is any error, then it may not be possible to produce a reading at Max. Should the word "Max" be replaced by the phrase "Max (or near Max)"?</p> <p>References to IEC documents may need to be updated.</p>	<p>No, use alternative method</p> <p>No</p> <p>No, seems to be a wrong interpretation of the IEC document</p>	<p>Considered in A.4.7.1</p> <p>Not considered</p> <p>Not considered</p> <p>References to IEC documents have been updated acc. to D11</p>
	<b>US</b>	<p>The requirement to perform two tare-weighing tests should be reduced to one test. Two tests are not necessary.</p> <p>Same comments as in question 1.2, regarding tilt test. Class I and II instruments should be exempt for the Discrimination test in A.4.8.</p>	<p>No</p> <p>Yes, discrimination will be discussed</p>	<p>Considered in A.4.6.1</p> <p>No, discrimination is very important for class I and II, but see 8.3.3</p>
<b>3.11</b> (contd.)	<b>AT</b>	<p>a) Refer to series IEC 61 000 instead of IEC 801 and amend accordingly</p> <p>b) Implement tests for vehicle mounted instruments with reference also to ISO 7637</p>	<p>a) Yes, general consensus; refer to D11</p> <p>b) Yes, see Q\$4.1; refer to D11</p>	<p>Changes in Annex B</p> <p>See B.3</p>
	<b>AU</b>	Amend to include references to current IEC documents where applicable.	Yes, general consensus	Considered in Annex B
	<b>CECI P</b>	<p>Reference to actual IEC standards for EMC, define levels according to IEC1000 and define mpe (1e) in R76</p> <p>B.2.2 There are Health and Safety issues e.g. at high temperature / high humidity. Whilst metrological concerns are important they should not impose testing obligations which may cause health or safety problems for the personnel carrying out the tests. The whole question of safeguarding the welfare of the test personnel should be considered for all tests (and especially this test.)</p> <p>B.4 semi-automatic adjustment devices should be considered</p> <p>B.4 Test sequence, before last passage: Which additional corrections are possible under "etc." ?</p>	<p>Yes, general agreement</p> <p>No, because this it not a metrological problem</p> <p>Yes</p> <p>Yes, to be clarified</p>	<p>Considered in Annex B</p> <p>Not considered</p> <p>Considered in B.4</p> <p>Considered in B.4</p>
	<b>DE</b>	<p>Update references to IEC standards (EMC) in Chapter B.3</p> <p>The testing procedures should take into account the latest developments concerning mobile phone networks and related typical disturbances</p> <p>For vehicle mounted instruments the special conditions of the on-board power supplies should be considered (refer to existing ISO standards)</p> <p>Chapter B.3 should contain some information about at least the registration of temperature, relative humidity and air pressure (if applicable) during the individual performance tests.</p> <p>More exact definition of "variation in the errors" and "differences in the results" in Chapter B.4</p> <p>"Span stability test" in the last paragraph "maximum allowable variations".</p>	Yes, will be discussed	Considered in Annex B

	<b>DK</b>	EMC tests should be updated	Yes, general consensus	Considered in Annex B
	<b>FI</b>	As question 3.6		
	<b>NL</b>	Please refer to our remark about atmospheric pressure (question 3.4). The EMC tests need upgrading for the relevant standards.	See comment above	
	<b>SE</b>	See point 3.10 above	Query: see above	
	<b>SI</b>	It is necessary to update the document with references to the valid IEC standards	Yes, general consensus	Considered in Annex B
	<b>UK</b>	For R76 (and EN45501) Section B.3.4, in Europe we have an understanding that if the NAWI passes its test at 6V/m on one face, it is then not necessary to do the 3V/m test on the other three faces. Could this be added? References to IEC documents may need to be updated. Also, a revision of OIML D11 is in progress, and may affect R76.	Yes, general consensus	Considered in B.3.5
	<b>US</b>	Reduce the voltage levels for the Electrostatic Discharge Test and the field strength levels for the Immunity Test stated in Annex B paragraphs B.3.3 and B.3.4 for instruments or components that are intended for use in hazardous area environments. Instrument designed for this type of environment are required to use reduced operating and excitation voltage levels making them very susceptible to external influences. These influences are not permitted in hazardous area environments. The U.S. would agree with a marking requirement indicating this limitation.	Yes, will be considered	Not considered: Vote Q§3.11: no change
<b>3.12</b>	<b>AT</b>	Insert: -operation manual, software information, means for securing, modules (if applicable).	Yes, list of documents should be updated	Considered in 8.2.1.2
	<b>AU</b>	As instruments are used in areas of legal metrology, matters relating to these instruments are likely to be subject to legal challenge. Therefore we believe that more detailed information should be available, including circuit diagrams. To enable thorough testing, operation and technical manuals should also be provided.	Yes, list of documentation will be updated	Considered in 8.2.1.2
<b>3.12 (contd.)</b>	<b>DE</b>	Add information about legally relevant (metrologically significant) software	Yes	Considered in 5.5 and 8.2.1.2
	<b>FR</b>	Add information about software	Yes, consensus	Considered in 5.5 and 8.2.1.2
	<b>KR</b>	It is required to add that the documents of manufacturers shall be kept confidential by testing laboratories.	Yes, could be considered; general items should, however, be treated in general documents	Considered in 8.2.1.2

	<b>NL</b>	Add a description (or at least version-number) of the software.	Yes, to be discussed	Considered in 5.5
	<b>SE</b>	Should be clarified as it has been done by WELMEC	Yes, to be revised	Considered in 8.2.1.2
	<b>SI</b>	The requirements can be stated more in details as it is done in documents of WELMEC group 2.	Yes, will be revised	Considered in 8.2.1.2
<b>3.13</b>	<b>AU</b>	See comment under 3.10 above.  In addition there are some areas in which the correct method of filling in the report sheets is not clear. For an example see the attached NSC Working Notes [Attachment C].	No, see comment above No, seems not be a general problem	Not considered Not considered
	<b>CECIP</b>	Simplification of checklist	Yes, as far as possible, but minor point	Checklist will be changed later
	<b>CN</b>	A.4.2.3) Accuracy of zero-setting (4.5.5) The result of accuracy of zero-setting/zero-setting indicating device shall be shown in the independent forms, because of the deviation from zero is not more than 0.25e, different from 0.5e.	Yes, could be added to 6.8.2 Query: Please explain the problem in more detail	Not considered
	<b>CZ</b>	We recommend to design the test format for creep and zero return test as one format. These tests are normally conducted together in practice.	No, because this does not apply to all cases	Not considered
	<b>DE</b>	To be amended as far as necessary due to modifications in requirements and testing procedures. Check on page 19: Number 4.5.3 should correctly read 4.6.3	Minor points	R76-2 will be changed later
	<b>DK</b>	Update corresponding to changes of EMC tests		R76-2 will be changed later
<b>3.13</b> (contd.)	<b>FR</b>	To be amended as far as necessary due to modifications in requirements and testing procedures	Yes, consensus	R76-2 will be changed later
	<b>KR</b>	Test Report Form can be used just using a minute weight. However, some testing laboratories use the Test Report Form in count number in some fields. It seems to be necessary to use the Test Report Form in counts.	Query: Please explain in more detail	
	<b>NL</b>	The changes in R 76-1 need to be reflected in the report. Further, article 3.3.3 is missing in the checklist.	Yes, general consensus	R76-2 will be changed later
	<b>SE</b>	See 3.10 above	See above	
	<b>UK</b>	R76 – 2 does not at present have a test page template for the Section 4.5 zero-setting and zero-tracking tests, and does not include them in its test index "Summary of Pattern Evaluation".	Minor point	R76-2 will be changed later

	<b>US</b>	Is it possible to provide R 76-2 in an electronic format to better automate the process and so that laboratories can use the same software programs to facilitate data exchange?	Several approval authorities offer such a program	
<b>3.14</b>	<b>AU</b>	Regrettably we have not been able to prepare detailed proposals for the following, they are items that we believe require consideration: Possible need for coverage of what to do for borderline results. Uncertainty calculations as required by ISO 17025.	No, this item should not be dealt with in a specific IR before there is a general OIML approach	Not considered
	<b>NL</b>	A general remark concerning all Recommendations for weighing instruments: Traditionally, a distinction is made between "non-automatic" and "automatic" weighing instruments. We suggest considering making another distinction: "static" versus "dynamic" weighing instruments (regardless the presence of an operator). But if such a change is too drastic, we can agree with the present distinction.	New idea: will be discussed under Q§2.1	Not considered acc. to vote
	<b>ZA</b>	(3.11) Check that IEC references are still valid- May need to have less information here and refer to applicable sections of D11	Yes, general consensus	Considered
<b>Q-Item</b>	<b>State</b>	<b>Comment</b>	<b>Secretariat's response</b>	<b>Considered in the Working Draft</b>
<b>Q§4</b>		<b>New Developments</b>		
<b>4.1</b>	<b>AT</b>	Follow 3.1.13 of Welmec Guide 2 and ISO 7637		
	<b>AU</b>	We believe that it may be desirable for these issues to be covered in a separate appendix or a separate document. EMC requirements for DC power supply should be common to NAWI's and AWI's. Distinctions would be required between instruments intended to operate whilst the vehicle is stationary, and those intended to operate whilst the vehicle is in motion.	Under Questionnaire item Q§4... the Secretariat does not comment on the proposals. All proposals concerning new developments will rather be discussed and considered when drafting the respective new chapters in R76 according to the Member's Votes (we refer to the "Proposals of the Secretariat" concerning Q§4.1 through Q§4.6 in the "Summary of Replies & Proposals, Timetable")	All proposals made under Q§4... have been considered as far as possible and in accordance with the results of the vote.
	<b>CA</b>	Vehicle mounted scales are subject to the same requirements as other NAWI. They operate in a static fashion and therefore have been subjected to the non-automatic weighing device specifications in Canada		
	<b>CECIP</b>	To be recognized for classification: The automatic catch-weighing instrument for frontendloader (wheel loader) is weighing dynamic, during the continuous lifting movement of the heaver through the weighing zone. For this reason the automatic catch weighing instrument for frontendloader (wheel loader) meets rather the definition T.3.7.2 of the 2 <sup>nd</sup> draft (OIML R51). That applies generally to all vehicle mounted weighing systems (e.g. waste collecting vehicles), which are based on measurement of the hydraulic pressure		

		<p>To be recognized for vehicle mounted NAWI's:  Security levels have to be discussed. For vehicle mounted weighing instruments in some cases it is impossible to carry out the eccentricity test because there is no room to put the weights. See for example petrol tankers. For this type of instrument an extra test is required in order to guarantee proper operation when not horizontal. A testing sequence, for type examination AND as test by verification of conformity to type, up to 10% tilt on the X+, X-, Y+ and Y- axis of the vehicle should be performed to guarantee proper operation in practice. The manufacturer of the weighing system can choose special tilt limits, these should than be marked on the weighing system. There shall be no indication or transmission of the Weighing result, if the tilt of the weighing system is higher than the maximal tilt limit for use.</p>		
<b>4.1</b> (contd.)	<b>CH</b>	Include a tilt limit (10 %) according to Welmec		
	<b>CN</b>	The use condition is special		
	<b>CZ</b>	There should be special tilt requirements at least decreasing the minimum limit the instrument should comply with (e.g. 5%). But of course it needs further discussion.		
	<b>DE</b>	See WELMEC Document 2 and WG2 Minutes. Define appropriate tilt requirements (10% sufficient?). Concerning EMC, see 3.11		
	<b>FR</b>	See WELMEC		
	<b>IE</b>	EMC should best be dealt with horizontally, at least for all weighing instruments		
	<b>NL</b>	Add special tilt requirements. Adapt the relevant tests for battery-operated instruments (ISO 7637) from draft OIML D11.		
	<b>RO</b>	Tilt, EMC, vibrations		
	<b>SE</b>	See 3.10 above		
	<b>SI</b>	That is the demand of the market		

	<b>UK</b>	WELMEC Working Group 2 has recommended that for indicators and weighing instruments on road vehicles with nominal 12V or 24V supplies, we should consider performing additional electrical testing for NAWIs powered from the vehicle battery, and that there are three categories of power supply to consider, these being mains, non-vehicle battery, and vehicle battery. The first two are already covered by R76 (and EN45501). However, perhaps this needs to be further clarified, as the characteristics of a vehicle battery supply obviously depend on whether or not the vehicle engine is running. OIML D11, which is being revised, may also refer to this. Also, Section 3.1.13 of the WELMEC 2 guide (Issue 3) gives further suggestions for tilting arrangements for these instruments, which could be incorporated.		
	<b>US</b>	Requirements appropriate for all applications of NAWIs should included in R76 but they must not limit technical progress		
<b>4.1</b> (concluded)	<b>ZA</b>	These instruments are appearing on the market and must be regulated with harmonised requirements.		
<b>4.2</b>	<b>AT</b>	Follow Welmec 2.5, but only in short		
	<b>AU</b>	This is a complicated area which does need to be addressed. It would need to cover aspects such as use of different components within the PC (different processors, graphics cards ...). Regrettably we are unable to provide a detailed proposal		
	<b>CA</b>	Canada does not evaluate PC's at the present time. Should we be required to evaluate them in the future, they would be subjected to both the non-automatic weighing device specifications and our draft metrological software specification.		
	<b>CECIP</b>	Divided position, possibilities and requirements should be discussed		
	<b>CN</b>	PC have been used as peripheral equipment in our country.		
	<b>CZ</b>	There should be established a basic criteria of using PC as an indicator.		
	<b>DE</b>	See WELMEC Documents 2.1and 2.5		
	<b>FR</b>	See WELMEC		
	<b>IE</b>	Should best be dealt with horizontally, at least for all weighing instruments.		
	<b>JP</b>	The specification of PC should be clarified because it is used for a part of the measuring instrument.		

	<b>NL</b>	Use the interpretations / philosophy from the WELMEC guides.		
	<b>RO</b>	To transpose the interpretations of the applicable WELMEC guides		
<b>4.2</b> (contd.)	<b>RU</b>	If PC is used as an indicator it should comply with all the requirements that apply to NAWIs indicators according to R76.		
<b>4.3</b>	<b>SE</b>	See 3.10 above		
	<b>SI</b>	That is the demand of the market.		
	<b>UK</b>	The WELMEC 2.5 guide and the last part of the WELMEC 2.1 guide cover this in detail.		
	<b>US</b>	PCs are a part of many NAWI instruments and R 76 should either recognize or, at a minimum, not prohibit their use. Software aspects / requirements: Should this item be dealt with in R 76?		
	<b>ZA</b>	Need for common international requirements/approach		
	<b>AT</b>	Follow Welmec Guide 2.3 in short		
	<b>AU</b>	The WELMEC 'free-programmable' concept could be a useful starting point for consideration		
	<b>CA</b>	Canada has developed draft specifications for metrological software. The scope of application for these specifications is not limited to Non-Automatic Weighing Devices; they will therefore be issued as a stand alone document		
	<b>CECIP</b>	Divided position: Only legally relevant software and only software controls that are really necessary should be introduced. See remark in 2.4..Software sealing should be defined		
	<b>CN</b>	Software has been used in weighing instruments		
	<b>CZ</b>	Just basic requirements should be established. The details should be set up in a separate document (e.g. guide etc.)		
	<b>DE</b>	Some major aspects/requirements should be dealt with, eg. on the basis of WELMEC Document 2.3		



<b>4.3</b> (contd.)	<b>FR</b>	See WELMEC software sealing and software in general		
	<b>IE</b>	Should best be dealt with horizontally, at least for all weighing instruments		
	<b>NL</b>	Use the interpretations / philosophy from the WELMEC guides (2.3).		
	<b>RO</b>	To transpose the interpretations of the WELMEC Guide 2.3		
	<b>RU</b>	Software aspects should be dealt with in the case of authorized access protection		
	<b>SE</b>	See 3.10 above		
	<b>SI</b>	That is the demand of the market.		
	<b>UK</b>	There is certainly a need to cover software aspects and requirements, but to cover this adequately in R76 would probably greatly increase the size of R76. The WELMEC 7.1 guide on software gives the opinion of WELMEC. However, an OIML Recommendation on software control is being produced, and R76 may therefore need to refer to it.		
	<b>US</b>	We cannot respond to this question, as we do not understand its scope. We would like to receive additional information to clarify the scope and details of software controls that are envisioned for possible adoption. We may support changes in this area once we learned more about what is meant by "software aspects".		
	<b>ZA</b>	Need for common international requirements/approach		
<b>4.4</b>	<b>AU</b>	This could also be covered in an Appendix. It is an important area in which there are currently substantial differences in approach. There is a danger that if these matters are not clarified only a minimum level of testing will be carried out reducing confidence in the pattern approval process. The sorts of aspects that need to be considered are: Differing capacities and scale intervals Different load cells Different housing shapes and/or materials Different modes of operation (multi-interval, multiple range, single range) Pole mounted displays vs integral displays Additional or reduced functions Differing software Differing power supply options Different interface options		
<b>4.4</b> (contd.)	<b>CA</b>	At the present time Canada does not define families of devices		

	<b>CECI P</b>	Divided position, item should be discussed		
	<b>CN</b>	In our country many types of weighing instruments are families		
	<b>CZ</b>	The definition of families of weighing instruments should be a subject of discussion. The family of instruments has to be at least from the same manufacturer, to have the same system of load transmission (load cells, electro magnetic force compensation system...), the same intention of use etc. Needs further discussion.		
	<b>DE</b>	Similar to OIML R60 for load cells. Consider also WELMEC proposals		
	<b>FR</b>	See WELMEC		
	<b>IE</b>	It is a fact of the market that weighing instruments are now produced in families, some even a mix of NAWI and autos. This needs to be taken into account in the procedure for conformity assessment to ensure that enforcement authorities are not faced with a continuous identification problem.		
	<b>JP</b>	1). It is a very important issue to clarify the definition of "family". 2) It is required to clarify selecting standards for EUT.		
	<b>KR</b>	It is necessary to clarify the definition of "families of weighing instruments" in order to avoid the dispute.		
	<b>NL</b>	Possibly refer to the R 60 philosophy for complete instruments		
<b>4.4</b> (contd.)	<b>PL</b>	This item should be dealt with in R76 (in the same way as for load cells WELMEC 4.2 Guide for load cells). It is important for type approval procedure.		
	<b>RO</b>	To define the family and the homogeneous family, and the criteria of establishing the representative types. Even if the modules of the measuring instruments are tested separately, the representative types should be tested as a whole.		
	<b>RU</b>	According to the practice of running pattern approval certification tests of Russian Federation testing instruments with the max. medium and minimum capacity of the "family" (with the same number of scale intervals) is enough to conform compliance of this "instruments family" to R76 requirements.		
	<b>SE</b>	See 3.10 above		
	<b>SI</b>	That is the demand of the market		

	<b>UK</b>	Guidance on dealing with families of instruments would be helpful. The WELMEC 2.4 guide on loadcells gives information about testing families of loadcells, and this could perhaps be extended to NAWIs		
	<b>US</b>	Testing an appropriate number of instruments representative of a family will speed up the type approval process, lower costs to manufacturers and users, and provide other efficiencies		
	<b>ZA</b>	Set requirements for adhering to the requirements of the OIML system.		
<b>4.5</b>	<b>AT</b>	1) Load cell (analogue, digital), indicator+display, POS device (we are not sure whether software should be really treated as module. At least one should specify which software could be meant and how it is separated) 2) Follow the principles of Welmec guide 2.5 in short		
	<b>AU</b>	1) Indicators including A/D modules. Indicators (which process digital signals). A/D modules. We anticipate that issues regarding proprietary digital load cell/module interfaces and data formats will create particular problems (e.g. regarding compatibility between various modules).		
	<b>CA</b>	Canada will test indicating and load receiving elements as separate modules.		
<b>4.5</b> (contd.)	<b>CECIP</b>	1) See examples in 2.4; Please recognize: Weight indicator = display + weight converter (the display/terminal will be a PC) 2) Separate the " software + display " part from " measurement + converter " part to avoid to certify the system every time we replace the display.		
	<b>CN</b>	1) Load cell; Electronic indicator. 2) Establish conformity of the complete instrument incorporating the module with the requirements of OIML R76.		
	<b>DE</b>	1) Indicators (analog and digital); Weighing modules Indicators: see also comment on question 2.4; adopt test procedures from WELMEC Guide 2.1 (simplify, however, the testing of "load cell interfaces"). Weighing modules: should be tested like complete NAWIs as far as possible Both modules should be dealt with in two annexes to R76-1; they should not be treated in separate OIML documents. OIML certificates should clearly indicate whether they are issued for a module or a complete instrument		

	<b>FR</b>	1) Indicators 2) Make sure that there is no ambiguity between the certificate of a complete instrument and the certificate of a module		
	<b>IE</b>	1) As certification of modules is not provided for under the directive, the scheme could be developed by OIML on a voluntary basis. 2) Start by the WELMEC scheme.		
	<b>JP</b>	1) Load-Cell (including Digital-Load-Cell), Indicator		
	<b>NL</b>	1) All modules as in WELMEC guides. 2) See WELMEC guides (2.5) for the modular approach.		
	<b>RO</b>	1) Testing & Certification should be possible for the following modules: indicators, cells, PC, mechanical and electrical connection elements, POS 2) Our proposal & rationale is: To make up homogeneous families and to perform the testing of modules where the testing of the whole instrument is not possible.		
<b>4.5</b> (contd.)	<b>RU</b>	1) Testing and certification should be possible for modules according to 3.5.4 R76 and (for) load receptor combined with load cells. 2) According to the experience of running certification tests, if RF accessories are used for combining load cells and load receptor (this) may have huge influence on instrument accuracy		
	<b>SE</b>	1) Indicator, load cell, load receptor, software; 2) Use the work of WELMEC		
	<b>SI</b>	1) Load cells; load receptors; indicators; software; 2) That is the demand of the market.		
	<b>UK</b>	1) All. (e.g. load cells, indicators, point-of-sale hardware, point-of-sale software) 2) To follow the very successful, and popular, approach adopted by WELMEC.		

	<b>US</b>	R 76 currently defines the requirements but those applicable to modules should be identified to ensure uniform application (e.g., an Annex or checklist for modules should be appropriate?). We believe the concern here is not as much with R76 but with the OIML Certificate System which must be modified to permit the issuance of Certificates of Conformance to modules. 1) Indicators and weighing elements. 2) We propose the U.S. submits a Pre-Working Draft of an International Recommendation "Digital indicators for weighing instruments" so it can be discussed under the existing project 1 under TC9/SC 1 "Revision of R 76." The intent of the Recommendation is to provide a concise summary of the requirements in R 76 applicable to indicator modules along with the test reports needed to include R 76 indicator modules under the OIML Certificate System.		
	<b>YU</b>	1) Electronics; Load cells		
	<b>ZA</b>	We suggest that testing of modules must only be allowed for Type Approval. Only complete operational weighing instruments should be allowed for Verification.		
<b>4.6</b>	<b>AU</b>	Expectation for pattern compliance. We believe that the current recommendation does not make it sufficiently clear that manufacturers are expected to ensure that instruments purporting to comply with the pattern approval, do in fact do so (and that action may be taken according to national legislation if this is found not to be the case).		
	<b>CECI P</b>	Requirements for multi- platform weighing machines		
	<b>CH</b>	Consider to include the possibility of using weighing instruments with more than one weighing mode (e.g. static and dynamic weighing or multi-interval instrument and single interval instrument) with a possibility to switch between the different modes.		
	<b>RO</b>	The requirement 5.3.7 should be extended to cover the AC supplied measuring instruments. The requirement 2.8.1.1. of the OIML R 106 (1997) should be maintained.		
	<b>UK</b>	Transportable instruments should be covered. Should EMC testing be done at greater than 1GHz, as mobile telephones now use frequencies greater than this? Also, conducted susceptibility. The OIML D11 (under revision) and IEC documents refer to this. Substitution of weights (R76 Section 3.7.3) should be expanded or re-thought. A multi-range NAWI with automatic changeover has been manufactured in which the change occurs at $Max_1 + 9e$ . R76 (and EN45501) are not clear whether this is acceptable. (See Sections 3.2 and 4.2.3)		

	YU	Software requirements for NAWI		
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Q-Item	State	Comment	Secretariat's response	Considered in the Working Draft
Q\$5		<b>Suggestions, Final Remarks</b>		
5	AT	In Welmec WG 2 it has been proposed to discuss the following items: Variation of mains frequency; Testing at Max (we would prefer <b>not</b> to change the present requirement); Portable instruments (see above, we would like to exclude axle weighers); Vehicle mounted instruments (see above); Testing at more than 1 GHz; Substitution of weights; Printing error in 8.3.3 (see above); p factor (see above); Multirange changeover ((we would prefer <b>not</b> to change the present requirement)	No comments here, because we think that most of the suggestions and final remarks are dealt with in the Summary under items Q\$1 through Q\$4.	All proposals made under Q\$5... have been considered as far as possible and in accordance with the results of the vote.
	AU	The document does not make any allowance for use of particular instruments in particular situations to be restricted (according to national regulation). For example, national regulation may restrict use of instruments with special temperature limits to certain locations. The testing and use of instruments using "mains adaptors" requires careful consideration and development of test methods. If alternative adaptors are used the integrity of test results (especially in relation to voltage tests, bursts, and EMS performance) may be compromised. Due to numerous reasons (differing electrical approvals, voltages, availability of cheaper adaptors, etc)) the use of alternative adaptors is highly likely. As well as vehicle mounted systems, other systems can utilise DC supply systems (e.g. industrial installations). Procedures for testing in these situations should be developed. A common approach to issues such as location of manufacture (change of factory / country / OEM etc) would be worthwhile. The need for changes to address issues raised by changes in the EMC environment (especially higher frequencies involved with mobile telephony and wireless LAN technologies) needs to be considered (however we believe a substantial lead time before making such tests mandatory would be required).		
	CECIP	Index for complete recommendation not only in reference to terminology For the long-term policy of OIML we preferre a unification of all recommendations concerning weighing instruments in one document (differentiation only via specific items).		
5 (contd.)	NL	Too detailed technical solutions (excluding alternative possibilities) should be avoided, as new technical solutions should be possible. For instance 6.3.2.1 reads: "Levers shall be fitted with knives only; these shall be pivoted in bearings." However this is a usual solution for non-self-indicating instruments, we think that requirements like these are too strict: other possibilities like steel flexures might be acceptable as well if properly designed.		



<b>PL</b>	R76 needs some changes and additions in connections with development of weighing techniques. We propose: (a) to delete items concerning mechanical NAWIs (see item 3.7) (b) to prepare OIML recommendations for indicators, peripheral equipment, software and new kinds of NAWIs (e.g. vehicle mounted nAWIs) for completions of R76	
<b>RO</b>	To update the references on the last page of R 76.	
<b>SE</b>	Go through the recommendation and try to change as many technical requirements as possible to performance requirements. Clarify the modular approach. Use as much as possible of the work that is done within WELMEC	
<b>UK</b>	Uncertainties: The expanded uncertainty U (for coverage factor k=2) for the type approval testing system shall not exceed 1/3 of the mpe. General format of R76: Much of R76 (and EN45501), appears to be based on mechanical instruments, but then with different requirements for electronic instruments. As new mechanical instruments are becoming rare, should R76 (and EN45501) instead be rewritten to apply to electronic instruments, with different requirements then for mechanical instruments?	
<b>US</b>	We commend the Co-Secretariats for initiating this work and for setting a positive and cooperative tone at its beginning. We look forward to working with you.	